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ABSTRACT

The Texas Education Agency completed its first study of the "Availability of Teachers for Texas Public Schools" in November 1982. That report contained an analysis of data from a variety of sources and concerned past staffing practices and the current and future status of teacher supply and demand. This study builds on the November 1982 Teacher Availability Report by updating that information. This study is divided into four focused investigations including: (1) current and historic staffing practices as reflected through analysis of available data in the Texas Education Agency for school years 1979-80 through 1980-83; (2) current and projected status of teacher availability and related issues reported by school districts in a statewide survey; (3) current and projected status of teacher supply and related issues reported by teacher educators from 63 Texas teacher education institutions; and (4) short-term and long-range projections of teacher supply and demand. Appendices include: the Teacher Availability District Survey; a questionnaire for teacher education institutions; a copy of Senate Bill 50; and an abstract of proposed 19 TAC Chapter 75. Thirty tables and four figures are also included. (JMK)

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STUDY OF THE AVAILABILITY OF TEACHERS FOR TEXAS PUBLIC SCHOOLS

Staff Report to the State Board of Education February 1984

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CHAPTER ONE

INTRODUCTION

BACKGROUND

The Texas Education Agency completed its first study of the *Availability of Teachers for Texas Public Schools* in November 1982. Impetus for that study came from the State Board of Education. It had been generally perceived that there was a growing shortage of teachers, particularly in specific critical areas such as mathematics, science, and vocational education. Speculation as to the causes centered on enrollment growth and a reduction in the number of new teachers entering the profession. Coupled with this perception was a concern that an exodus from the teaching profession was occurring and that smaller school districts or those which are geographically isolated were having serious problems attracting qualified teachers. Within this context the November 1982 Teacher Availability Report was issued. That report contained an analysis of data from a variety of sources. Agency data were examined to identify historical trends in staffing practices. Data collected from selected districts offered their perspective on the current and future status of teacher availability. Selected teacher educators were interviewed, yielding a perspective on supply issues. Finally, short-term and long-range projections of teacher supply and demand were calculated.

In general, the purpose of that study was to provide balanced viewpoints as well as a comprehensive examination of the elements of teacher availability in 1981-82. It was in a sense a fact-finding mission combined with projections aimed at providing some quantitative basis for policy making.

This study builds on the November 1982 Teacher Availability Report. Recognizing the need to take another look at the teacher availability issue, the Commissioner of Education directed that the Department of Planning and Research conduct further study of the issue and prepare a report for the State Board of Education. Thus, the purpose of the present study is to update the earlier report, providing more recent information concerning teacher availability.

KEY DEFINITIONS

Recognizing the importance of establishing definitions for certain terms, this section presents those key terms and their definitions as used throughout the study.

attrition—
losses from the currently employed teacher-force due to death, retirement, quitting the profession, or moving to another state.

attrition rate—
that percent of the currently employed teacher force who leave teaching in Texas between two points in time.

demand—
the number of new teachers needed at any point in time. It consists of demand due to growth in enrollment and to attrition.

projected employment—
the total size of the teacher force in 1990-91.

FTE—
a measure of the size of the work force in terms of full-time equivalents. For example, two half-time mathematics teachers equal one FTE mathematics teacher.

graduate—
an individual who is a college graduate and who has been recommended for certification as a teacher.

less-than-fully-qualified—
an individual who occupies a teaching position but who is not certified for, or properly endorsed for, or does not have the proper number of college hours for the assigned teaching field.

original entries—
the total number of school age individuals who have enrolled in the Texas public schools any time during the year, as reported in the *Superintendent's Annual Report*.

shortage—
at the district level, shortage consists of the number of teaching positions for which a fully-qualified teacher could not be located and employed; at the state level, shortage exists to the extent that demand exceeds supply.

super regions—
the groupings of Education Service Center (ESC) regions into five geographic regions (North Texas, ESCs 8-11; Central Texas, ESCs 12-15; West Texas, ESCs 16-19; East Texas, ESCs 4-7; and South Texas, ESCs 1-3 and 20).

supply—
composed of four major elements: teachers presently employed, new teachers, in-migrating teachers, and certified teachers who have taught but who are not currently teaching.

surplus—
at the state level, surplus consists of the extent to which supply exceeds demand.

turnover—
losses from the currently employed teacher force due to promotion, inter-district movement, and attrition.

TEC 13.032(e)—
S.B. 50, 67th Legislature, Regular Session; requires competency testing in basic skills areas for persons entering the teaching profession (Appendix C).

TEC 21.101—
H.B. 246, 67th Legislature, Regular Session; curriculum revision statute (Appendix D).

DESIGN OF THE STUDY

This study was divided into four focused investigations:

1. Current and historic staffing practices as reflected through an analysis of available data in the Texas Education Agency for school years 1979-80 through 1982-83;

2. Current and projected status of teacher availability and related issues reported by school districts in a statewide survey;

3. Current and projected status of teacher supply and related issues reported by teacher educators from 63 teacher education institutions in Texas; and

4. Short-term and long-range projections of teacher demand and supply.

Research in each major area involved design considerations which reflect time constraints, availability of data, and findings from prior studies. This comprehensive study specifically avoided the issue of quality of teacher performance in the classroom, although the question of teacher qualifications (i.e., certification requirements) is raised. The potential effects of curriculum revision (TEC 21.101) and teacher competency testing, while not included in the projection model, did receive some examination.

For the purpose of the study, a "teacher shortage" exists when school districts, either individually or collectively, are unable to locate and employ a fully-qualified (i.e., certified and properly endorsed) teacher for a position authorized within the existing availability of local, state, and federal funds. Hence, demand is the aggregate need for teachers within varying local district settings (e.g., differential pupil/teacher ratios, comprehensive course offerings, attrition rates, turnover rates, and enrollment growth rates). Conversely, supply is the combination of the teaching force presently employed, newly certified teachers produced annually in Texas teacher education institutions, individuals who hold valid teaching certificates but who are not employed as teachers, and out-of-state teachers migrating to Texas.

ASSUMPTIONS

Assumptions play an integral part in any study which purports to examine historical trends and current activities in an effort to project future circumstances accurately. The teacher availability study assumed that certain variables would remain constant unless changes occur either by chance or through thoughtful, planned intervention. Those occurrences, which might happen by chance, can be neither accurately predicted as to time, place and magnitude nor quantified in terms of influence. On the other hand, changes resulting from planned intervention are responsive to anticipated situations and should alter future conditions in a predictable manner.

Two categories of assumptions were made. The first deals with assumptions about the data and their interpretation. The second involves the present and future environment in which the study sets forth projections and recommendations. The extent to which the assumptions are false seriously limits the overall findings and conclusions upon which useful courses of action may be based. Assumptions concerning the data are:

- data which are subject to audit are accurate;
- assurance of anonymity for respondents encourages honest information;
- the random selection of districts sampled provides representative cross-sectional information;
- sampling strategies are adequately outlined and followed to allow meaningful and accurate data interpretation; and
- key elements have universally accepted definitions, ensuring comparable responses.

The second category of assumptions applies equally to all components dealing with present and future teacher demand and supply conditions. It is assumed that there will be no significant changes in:

- the Texas birthrate;
- the Texas economic framework;
- the institutional framework and structure of Texas public education;
- public education staffing patterns (e.g., teacher/pupil ratios, in wages, technological advances, curriculum);
- the percent of the population that attends public school; and
- the percent of the public school population that requires specialized instruction (i.e. limited English proficient or handicapped).

LIMITATIONS

Limitations to the study encompass a variety of topics, including: (1) the current economic situation which has led to a subtle but observable change in terms of teacher mobility; (2) the cost of relocation limiting the options a prospective teacher may exercise; and (3) fewer households appear willing to forego second incomes during periods of recession. Thus, future projections based on behavior patterns attributable to temporary economic conditions are difficult at best.

Texas has undergone an unprecedented period of growth due to migration from other states as well as Mexico. At this point it is difficult to gauge accurately its duration or eventual impact on student enrollment or the availability of teachers educated and/or experienced in other states. Furthermore, competition from private industry for individuals with teaching certificates, while not as intense during the recent period of cutbacks, may again reappear.

The recent slight increase in the number of individuals entering the teaching profession forces a choice between an assumption of continued growth or an assumption that is a cyclical phenomenon. Either decision places serious limitations on supply-side projections.

The nature of the issue and the data point up the differences between teacher availability at the district level and at the statewide level. At the district level, openings for teachers occur for a multitude of reasons and are reflected in a turnover rate based on the number of positions superintendents must fill because teachers leave employment in that district. Statewide openings are created by enrollment growth and attrition. Attrition includes only those who have died, retired, left the profession, or moved to another state. It does not include those who move from one district to another. Thus, the district turnover rate is normally higher than the statewide attrition rate. This difference in perception of need between the statewide level and the district level requires a degree of specification when referring to the shortage of teachers.

Because of changes in data collection methods, historical data relevant to the study were available only as far back as the school years 1978-79. Furthermore, investigations of this type are subject to limitations stemming from the use of data collected over short periods of time for narrowly defined purposes by other divisions within the Agency. Selectively trying to research certain questions on the basis of such data requires inference and subjective assessment. The detailed examination of existing Agency data demonstrates the need to reconsider many data elements presently being collected from school districts. The state of the teacher certification files is an excellent example of the status of certain Agency data systems. In that data system, there are numerous examples of individuals who are teaching in local districts but cannot be found in the certification files. Duplicate identification numbers (i.e., social security numbers) create additional data manipulation problems. The method by which second and third year Emergency Permit and Special Assignment Permit information is maintained defies retrieval and analysis. The information related to the widely used Temporary Classroom Assignment Permit (TCAP) is not collected or maintained by the Agency at all. The fact that such a situation exists seriously limits accurate assessment of conditions related to the demand and supply of qualified teachers.

The study of teacher availability requires a multifaceted design. It must include not only an analysis of the demand for teachers and the supply of teachers, but an investigation of the various aspects of these two components of teacher availability. Influences underlying the demand for teachers as well as factors contributing to increased or decreased supply must be researched. This report undertakes the detailed analysis of the status of teacher availability by researching four of the facets: historical trends, current status of teacher education, current status of teacher availability at the district level, and projections to 1990-91 of teacher supply and demand.

CHAPTER TWO

STUDY OF EXISTING AGENCY DATA FOR 1979-80 THROUGH 1982-83

INTRODUCTION

The purpose of this chapter is to present information on the continuing examination of demand-side issues concerning teacher availability within the framework of existing Agency data. It focuses on: (1) responsiveness of school districts to changes in student enrollment and staffing patterns over the past four years, and (2) changes during the recent period with respect to funding sources which support instructional staffing.

The historical look at staffing starts with the 1979-80 school year and continues through 1982-83. It is important to recognize, however, that the accuracy of data available in the Agency's files is directly related to the extent to which such information is subject to audit. Hence, investigations of this type are subject to limitations stemming from alternative uses of existing Agency data files. An examination of comparative issues on the basis of such data requires subjective assessments which tend to detract from the total confidence one can place on results.

METHODOLOGY

It is possible to examine how school districts (grouped in various ways) respond to enrollment changes by making comparisons of changes in student membership counts and instructional staffing patterns. Information used to make such comparisons included original entry counts (enrollment) provided in the *Superintendent's Annual Report* and professional status code totals for instructional personnel extracted from the *Roster of Personnel* (reported in full-time equivalents or FTEs). The latter also provided funding source information used to make further comparisons and to raise important supply- side issues. Additional student enrollment data concerning bilingual and special education programs were obtained from the respective divisions within the Agency.

School districts were grouped to reflect regional and Average Daily Attendance differences. Categorization by Average Daily Attendance (ADA) separated districts into six levels, ranging from less than 500 to more than 10,000. This represents a change from the November 1982 Teacher Availability Report in which schools were grouped into 10 categories. This change to six levels of ADA provides a more rational view of growth with respect to districts over 10,000 and to reflect the commonality among districts under 500. Regional considerations were addressed by examining education service center (ESC) regions as the smallest unit and then combining various ESC regions to form five geographic "super regions". The concept of larger geographic regions has been introduced as part of an effort to lay the foundation for future projection and prediction models.

Data from the *Superintendent's Annual Report* allowed for year-to-year grade level enrollment changes and cohort analysis. Instructional personnel information was examined by major teaching assignment code, collapsed across codes, to focus on basic skills as well as other pertinent aspects of teacher deployment (i.e., vocational, bilingual and special education). In order to make appropriate comparisons, proportions of teachers within each category were derived with respect to statewide totals. The percent of change from 1979-80 to 1982-83 was also calculated. This methodology focused primarily on the question of response of staffing to changes in enrollment by ADA and geographic location. Through this procedure additional insight with respect to present staffing patterns can be ascertained.

FINDINGS

A comparison of statewide data on student enrollment and instructional staffing for the period 1979-80 to 1982-83 (Table 1) found a proportionately greater increase in the number of teachers (in FTEs) employed than the enrollment increase would indicate for preK-K and secondary levels. This is consistent with previous

trends noted in earlier reports. The statewide growth in enrollment over the four-year period increased by 3.4 percent. Grade levels that experienced the greatest enrollment increases were K (12.5 percent), 1 (7.5 percent), 5 (6.9 percent), 6 (15.6 percent), 7 (13.4 percent), and 8 (7.6 percent). Conversely, declines were observed in grades 3 (-4.0 percent), 10 (-7.6 percent), 11 (-6.9 percent), and 12 (-3.9 percent). Staffing changes

Table 1: Statewide Student Membership and Instructional Staff Data

	Student Membership		% Change from 1979-80		Instructional Staffing		
Grade Level	Original Entries for 1982-83	% of Total Membership	By Avg. Cohort	By Grade Level	Number of Teachers 1982-83	% of Total Teaching Staff	% Change from 1979-80
Pre K	14754	.5	N/A	- 7.2			
K	223863	7.2	N/A	+12.5			
1	265347	8.5	+26.3	+ 7.2			
2	248858	8.0	- 4.6	+ 3.2			
3	241471	7.8	+ .9	- 4.0			
4	243260	7.8	+ .7	+ 1.0			
5	248922	8.0	+ 1.4	+ 6.9			
6	262201	8.4	+ 1.9	+15.6			
7	261560	8.4	+ 4.9	+13.4			
8	245493	7.9	- 1.5	+ 7.6			
9	257604	8.3	+ 8.9	+ .4			
10	221835	7.1	-10.1	- 7.6			
11	196245	6.3	-11.7	- 6.9			
12	181419	5.8	-11.1	- 3.9			
Sub-total (PK-K)	238617	7.7	+11.1		5730	3.4	+12.1
Sub-total (1-6)	1510059	48.5	+ 4.8		61100	36.5	+ 3.7
Sub-total (7-12)	1364156	43.8	+ .7		63968	38.2	+ 4.7
Total	3112832	100.0	+ 3.4		-----	----	-----
All level					1820	1.1	+ 2.4
Bilingual	146544	4.7	+ 2.8		7287	4.3	+15.3
Special Ed.	351257	11.3	+ 8.9		17237	10.3	+11.2
Vocational	N/A	N/A	N/A		10394	6.2	+ 2.8
Total	3112832	----	-----		167536	100.00	+ 5.5

SOURCE: SAR and Roster of Personnel, Texas Education Agency, 1979-80 through 1982-83.

NOTE: Number of teachers represents a count by full-time equivalents (FTEs). Totals may vary due to computer rounding or missing codes in the data files.

for the same period were most dramatic at the secondary level where the increase continues to exceed enrollment growth. Almost five percent more teachers were reported at this level for 1982-83 over 1979-80. This increase compares most favorably with the secondary enrollment increase of less than one percent. With respect to special populations (e.g., bilingual and special education), increases in staffing far exceeded growth in student population. Specifically, bilingual student enrollment increased by almost three percent while staffing for bilingual education increased by over 15 percent. In special education, the number of teachers (in FTEs) rose by over 11 percent compared to student increases of almost nine percent.

Table 1 also includes cohort enrollment activity. In the November 1982 Teacher Availability Report, it was noted that grades 1, 7, and 9 showed sizeable increases in enrollment which was interpreted as a response to half-day kindergarten and private school grade configurations. Over the four-year period, average cohort changes for these grades were 26.3 percent for kindergarten, 4.9 percent for grade 7, and 8.9 percent for for grade 9. The steady decline in cohort enrollment at grades 10 through 12 (all averages exceeded a 10 percent loss for each grade) continued to occur. The cumulative impact of these losses indicates that on a statewide basis the attrition rate for students from the 9th to the 12th grade approached 30 percent.

Table 2: Number and Percent Change in Student Membership and Instructional Staff for 1979-80 to 1982-83 By Size of District, ESC Region, and Super-Region

District Category	Elementary Teachers			Secondary Teachers			Student Membership		
	Number for 1982-83	% of Statewide Total	% Change from 1979-80	Number for 1982-83	% of Statewide Total	% Change from 1979-80	Number for 1982-83	% of Total Membership	% Change from 1979-80
Over 10,000	32045	52.4	+ 5.4	34074	53.3	+ 6.1	1736053	55.8	+ 5.1
5,000 - 9,999	4825	7.9	- 10.0	5645	8.8	- 5.4	269868	8.7	- 6.7
1,500 - 4,999	14037	23.0	+ 7.1	14154	22.1	+ 8.2	676808	21.7	+ 6.2
1,000 - 1,499	2789	4.6	+ 1.1	3151	4.9	+ 3.9	134930	4.3	+ .5
500 - 999	3883	6.4	+ 6.1	3962	6.2	+ 2.9	165782	5.4	+ 2.7
Under 500	3517	5.8	- 2.1	2974	4.6	- 1.6	128391	4.1	- 6.8
ESC Region									
1	2320	3.8	+ 6.9	3521	5.5	+ 11.7	203660	6.5	+ 12.3
2	2081	3.4	- 4.4	2264	3.5	+ 1.1	108671	3.5	+ .6
3	1210	2.0	+ .5	1401	2.2	+ 1.2	55442	1.8	- 1.1
4	13139	21.5	+ 8.0	13987	21.9	+ 9.5	663717	21.3	+ 6.4
5	1951	3.2	- 1.1	2027	3.2	- 3.9	90229	2.9	- 3.0
6	2251	3.7	+ 14.8	2153	3.4	+ 10.2	99903	3.2	+ 11.8
7	3129	5.1	+ 6.8	3254	5.1	+ 5.9	144969	4.7	+ 3.6
8	1269	2.1	+ .7	1005	1.6	- 1.3	53955	1.7	- .4
9	936	1.5	+ 1.6	904	1.4	- .9	42140	1.4	- 1.2
10	8223	13.5	- 1.0	8108	12.7	+ 2.6	403026	12.9	- .5
11	4673	7.6	+ 5.5	5066	7.9	+ 7.0	254697	8.2	+ 3.2
12	2239	3.7	+ 1.1	2300	3.6	0.0	101339	3.3	+ .8
13	1201	2.0	+ 2.1	1318	2.1	+ 6.4	154555	5.0	+ 4.7
14	1115	1.8	+ 3.1	1098	1.7	+ 1.7	49686	1.6	+ 2.9
15	1121	1.8	+ 3.3	1001	1.6	+ 3.4	50259	1.6	+ 4.4
16	1862	3.1	+ 2.1	1764	2.8	+ 7.2	81590	2.6	+ 1.9
17	1998	3.3	- 1.0	1934	3.0	- 2.9	86244	2.7	- 3.3
18	1876	3.1	+ 11.9	1809	2.8	+ 4.4	83612	2.7	+ 12.1
19	2943	4.7	+ 11.0	1986	3.1	- .8	125692	4.0	+ 2.4
20	3771	6.2	- 1.3	5224	8.2	+ 3.2	261444	8.4	+ .1
Super Region									
South	9386	15.4	- .9	12541	19.5	+ 4.9	629219	20.2	+ 3.7
East	20670	33.8	+ 7.6	21401	33.5	+ 7.6	998818	32.1	+ 5.6
North	15101	24.7	+ .9	15081	23.6	+ 1.5	753818	24.2	+ .7
Central	7625	12.6	+ 2.0	7606	11.9	+ 5.4	355839	11.4	+ 3.3
West	8286	13.6	+ 7.3	7671	11.7	+ .5	375138	12.1	+ 2.9
Statewide Totals	61180	100.0	+ 4.7	63968	100.0	+ 5.7	3112832	100.0	+ 3.4

SOURCE: SAR and Roster of Personnel, Texas Education Agency, 1979-80 through 1982-83.

NOTE: Number of teachers represents a count by full-time equivalents (FTEs). Totals may vary due to computer rounding or missing codes in the data files.

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An examination of the same data categorized by ADA and geographical groupings (Table 2) revealed far more variability. Statewide data reflect only an average and can be misleading if it is assumed that trends for the state as a whole are typical of changes in various district groupings. Table 2 presents a summary of the changes in enrollment and instructional staffing from 1979-80 to 1982-83 by district category. As districts experience increases or decreases in their student enrollment, some move from one ADA category to another. Over a four-year period shifts from one level to another tend to impact certain categories more than others. The most notable results by ADA grouping include: (1) substantive enrollment and staffing increases for districts with over 10,000 ADA and those with 1,500 to 4,999 ADA; and (2) declines of over six percent in enrollment with commensurate losses in teachers for those districts in the 5,000 to 9,999 ADA range and, to a lesser degree, districts with under 500 ADA. It is important to recognize that changes in staffing for all ADA groupings, except the 5,000 to 9,999 ADA level, consistently exceeded changes in enrollment.

With respect to regional differences based on either ESC region or the five "super regions", certain areas have experienced dramatic increases in student enrollment (Table 2). While statewide enrollment growth increased by 3.4 percent, ESC Regions I Edinburg (12.3 percent), VI Huntsville (11.8 percent), and XVIII Midland (12.1 percent) showed the greatest gains in student enrollment. The major geographic area experiencing the greatest increase in students (5.6 percent) was East Texas. East Texas also had the largest increase in staffing at both the elementary and secondary levels (7.6 percent). Staffing changes by ESC region showed a great amount of variability at both the elementary and secondary levels. ESC regions showing the greatest increase in staffing compared to enrollment were Regions IV (Houston), VII (Kilgore), and XI (Fort Worth).

Table 3 presents information concerning staffing changes in bilingual and special education. While the changes observed show patterns of interest, it is important to recognize that the November 1982 Teacher Availability Report presented no pattern of staffing "supply" in response to enrollment "demand." It was observed that as enrollment changed there appeared to be little, if any, linkage to staffing changes. While no attempt has been made to investigate that phenomenon further, it is encouraging to see the widespread increases in staffing for both bilingual and special education. Only districts in the 1,000 to 1,499 ADA and under 500 ADA ranges showed declines in both fields. The dramatic decline in the number of bilingual teachers for ESC Region XIX (El Paso) and West Texas occurred because of a change in reporting of teacher assignments by El Paso ISD rather than a real loss of teachers (in FTEs). The fact that two-thirds of all bilingual teachers are in South Texas is understandable, given the relative concentration of students in biligual programs. However, as student population patterns shift, it will be important to ascertain if commensurate shifts are also made in the bilingual teaching force.

Data presented in Tables 4 and 5 focus on the relationship of staffing patterns to funding source by ADA and geographic location. The Foundation School Program supports over 70 percent of all elementary and secondary teachers. Local funds are used to support an additional 21 to 24 percent. The most notable change with respect to funding occurred in 1981-82 with the cutback in staff supported by federal funds. The drop of almost 20 percent in the number of teachers (in FTEs) funded out of federal categorical aid was largely compensated for by the use of local funds. From 1979-80 to 1982-83, the increase in the number of teachers supported by local monies was 16 percent compared to less than a four percent increase in teachers supported by the Foundation School Program. Only districts in the 5,000 to 9,999 ADA category showed declines in all funding sources. Furthermore, the commitment of local funds to support teaching positions was greatest for districts with under 5,000 ADA. Geographic breakdowns showed that South Texas had the largest increase in support by local monies, followed by East Texas and North Texas. Even with the changes in funding support, Region I (Edinburg) continued to have the greatest dependence on federal monies for elementary teachers — more than 25 percent of all elementary teachers for 1982-83. This dependence, combined with the smallest proportional support (10 percent) from local monies, means that Region I could face serious budgetary and staffing problems if federal support were dramatically reduced. Region XI (Fort Worth) had the least dependence (3 percent) on federal support for staffing at the elementary level. Region XVIII (Midland) had the highest local support (31 percent) for elementary teachers.

Table 3: Number and Percent of Bilingual and Special Education Teachers by Size of District, ESC Region, and Super-Region for 1982-83

District Category	Bilingual Education			Special Education		
	No. for 1982-83	% of Statewide Total	% Change from 1979-80	No. for 1982-83	% of Statewide Total	% Change from 1979-80
Over 10,000	4989	68.5	+ 19.2	9613	55.8	+ 13.5
5,000 - 9,999	858	11.8	+ 9.7	1564	9.1	+ 5.6
1,500 - 4,999	1114	15.3	+ 9.6	4457	25.9	+ 11.0
1,000 - 1,499	131	1.8	- 11.5	535	3.1	- 3.9
500 - 999	127	3.7	+ 39.6	702	4.1	+ 16.8
Under 500	60	.8	- 31.0	345	2.0	- 2.5
ESC Region						
1	2647	36.4	+ 12.9	814	4.7	+ 22.2
2	519	7.1	+ 58.2	630	3.7	+ 12.7
3	25	.3	- 3.8	307	1.8	+ 4.4
4	692	9.5	+ 45.1	3684	21.4	+ 15.8
5	13	.2	+225.0	569	3.3	+ 8.6
6	22	.3	+100.0	593	3.4	+ 18.6
7	26	.4	+225.0	834	4.8	+ 9.2
8	2	0	+100.0	298	1.7	+ 8.4
9	10	.1	+400.0	285	1.7	+ 1.8
10	412	5.7	+ 24.8	2173	12.6	+ 7.6
11	85	1.2	+ 3.7	1414	8.2	+ 12.0
12	23	.3	+ 15.0	589	3.4	+ 3.0
13	328	4.5	+178.0	1048	6.1	+ 12.8
14	46	.6	+ 76.9	276	1.6	+ 5.3
15	49	.7	+ 16.7	279	1.6	+ 9.8
16	89	1.2	+ 50.8	462	2.7	+ 15.5
17	202	2.8	- 5.2	508	3.0	+ 1.6
18	141	1.9	+ 35.6	408	2.4	+ 12.4
19	319	4.4	- 42.3	562	3.3	+ 11.7
20	1616	22.2	+ 3.9	1449	8.4	+ 7.8
Super Region						
South	4807	66.2	+ 13.0	3200	18.6	+ 11.8
East	753	10.4	+ 50.6	5680	33.1	+ 14.3
North	509	7.0	+ 22.7	4170	24.3	+ 8.7
Central	446	6.1	+116.5	2192	12.8	+ 8.7
West	751	10.3	- 19.2	1940	11.3	+ 9.9
Statewide Totals	7287	100.0	+ 15.3	17237	100.0	+ 11.2

SOURCE: Roster of Personnel, Texas Education Agency, 1979-80 through 1982-83.

NOTE: Number of teachers represents a count by full-time equivalents (FTEs). Totals may vary due to computer rounding or missing codes in the data files. Declines for Region 19 and the West in bilingual teachers reflect changes in reporting by El Paso ISD in 1981-82.

Table 4: Number and Percent of Elementary Teachers by Major Funding Source, Size of District, ESC Region, and Super-Region for 1982-83

	Foundation School Program				Local				Federal and Other Miscellaneous			
District Category	Number for 1982-83	% of Statewide Total	% of Category Total	% Change from 1979-80	Number for 1982-83	% of Statewide Total	% of Category Total	% Change from 1979-80	Number for 1982-83	% of Statewide Total	% of Category Total	% Change from 1979-80
Over 10,000	23269	54.0	73	+ 6.9	6540	49.9	20	+12.9	2231	46.7	7	-21.7
5,000 - 9,999	3538	8.2	73	- 6.4	912	7.0	19	-12.1	373	7.8	8	-30.9
1,500 - 4,999	9572	22.2	68	+ 4.4	3229	24.7	23	+28.0	1233	25.8	9	-12.5
1,000 - 1,499	1821	4.2	65	- 2.2	746	5.7	27	+28.2	221	4.6	8	-29.4
500 - 999	2589	6.0	67	+ 3.5	923	7.0	24	+31.5	369	7.7	9	-29.3
Under 500	2272	5.3	65	-10.8	746	5.7	21	+20.3	346	7.2	14	-17.6
ESC Region												
1	1459	3.4	63	+16.3	243	1.9	10	+29.9	616	12.9	27	-15.2
2	1349	3.1	65	- 5.6	470	3.6	23	+17.5	260	5.5	12	-24.6
3	761	1.8	63	- .5	352	2.7	29	+11.4	95	2.0	8	-21.5
4	9441	21.8	71	+ 6.9	3248	24.8	24	+16.3	649	13.6	5	-10.2
5	1371	3.2	70	- 1.8	440	3.4	23	+ 6.8	138	2.9	7	-17.4
6	1571	3.6	70	+14.9	508	3.9	23	+45.1	170	3.6	7	-26.1
7	2206	5.1	70	+ 3.8	687	5.2	22	+31.6	233	4.9	8	-17.7
8	921	2.1	73	+ .4	219	1.7	17	+14.7	126	2.6	10	-15.4
9	625	1.4	67	- 3.4	241	1.8	26	+24.2	69	1.4	7	-13.7
10	6177	14.3	75	- 1.1	1579	12.1	19	+ 6.5	464	9.7	6	-19.6
11	3677	8.5	79	+ 4.5	825	6.3	18	+18.7	168	3.5	3	-35.1
12	1566	3.6	70	+ 2.6	466	3.6	21	+ 8.6	205	4.3	9	-20.2
13	2103	4.9	66	+ 2.6	827	6.3	26	+ 7.8	269	5.7	8	-14.9
14	763	1.8	68	+ .4	279	2.1	25	+25.7	68	1.4	7	-29.9
15	617	1.9	73	+ 1.9	189	1.4	17	+28.6	114	2.4	10	-19.1
16	1253	2.9	67	+ .4	459	3.5	25	+ 7.2	152	3.2	8	-16.5
17	1261	2.9	63	0	480	3.7	24	+ 9.6	255	5.4	13	-19.8
18	1204	2.8	64	+13.3	478	3.6	31	+43.8	92	1.9	5	-11.5
19	1992	4.6	78	+21.7	300	2.3	12	0	251	5.3	10	-19.6
20	2698	6.2	71	- 2.0	706	5.4	19	+21.9	366	7.7	10	-37.3
Super Region												
South	6267	14.5	67	+ 1.1	1771	13.5	19	+19.5	1337	28.1	14	-24.8
East	14589	33.8	70	+ 6.3	4883	37.3	24	+19.8	1190	25.0	6	-15.2
North	11400	26.4	75	+ .6	2864	21.9	20	+11.8	827	17.4	5	-22.3
Central	5249	12.1	68	+ 2.2	1761	13.4	23	+12.5	656	13.8	9	-19.1
West	5710	13.2	69	+ 9.2	1817	13.9	22	+15.9	750	15.8	9	-18.1
Statewide Totals	43215	100.0	71	+ 3.8	13102	100.0	21	+16.3	4789	100.0	8	-20.2

SOURCE: Roster of Personnel, Texas Education Agency, 1979-80 through 1982-83.

NOTE: Number of teachers represents a count by full-time equivalents (FTEs). Totals may vary due to computer rounding or missing codes in the data files.

The percentage of teachers supported by Foundation School Program monies by ESC region ranged from 63 to 79 percent at the elementary level and 63 to 83 percent at the secondary level.

Tables 6 and 7 provide information on the number and proportion of teachers (in FTEs) devoted to basic skills supported by federal funds. Consistent with earlier information concerning federal support of teaching positions, statewide data showed a massive decline in the number of elementary and secondary teachers (in FTEs) in reading, language arts and mathematics paid for out of federal monies. These declines ranged from 25 percent for elementary reading teachers to over 52 percent for secondary mathematics. Because of the reduction in staff supported by federal funds, all basic skills areas have shown a decline in dependence on federal support. Only elementary reading teachers (62 percent) continue to receive major support from federal funds.

Table 5: Number and Percent of Secondary Teachers by Major Funding Source, Size of District, ESC Region, and Super-Region for 1982-83

	Foundation School Program				Local				Federal and Other Miscellaneous			
District Category	Number for 1982-83	% of Statewide Total	% of Category Total	% Change from 1979-80	Number for 1982-83	% of Statewide Total	% of Category Total	% Change from 1979-80	Number for 1982-83	% of Statewide Total	% of Category Total	% Change from 1979-80
Over 10,000	25640	54.9	75	+ 4.0	7387	48.1	22	+ 17.2	1041	55.1	3	- 10.4
5,000 - 9,999	4234	9.1	75	- 5.1	1201	7.8	21	- 5.0	207	11.0	4	- 13.4
1,500 - 4,999	9993	24.1	70	+ 4.6	3788	24.7	27	+ 24.8	370	19.6	3	- 24.6
1,000 - 1,499	2080	4.5	66	- 1.8	984	6.4	31	+ 26.6	86	4.6	3	- 37.2
500 - 999	2734	5.9	69	+ .3	1114	7.3	28	+ 16.4	115	6.1	3	- 32.0
Under 500	2026	4.3	68	- 8.7	872	5.7	29	+ 22.6	71	3.8	3	- 17.4
ESC Region												
1	2872	6.1	82	+ 9.5	389	2.5	11	+ 56.2	257	13.7	7	- 7.9
2	1576	3.4	70	- 1.1	584	3.8	26	+ 13.2	102	5.6	4	- 15.7
3	888	1.9	63	- 3.0	478	3.1	34	+ 13.3	33	1.8	3	- 32.7
4	10182	21.8	73	+ 7.0	3598	23.4	26	+ 19.3	206	11.0	1	- 11.6
5	1405	3.0	69	- 2.9	563	3.7	28	- 6.3	57	3.0	3	- 3.4
6	1577	3.4	74	+ 8.9	502	3.3	23	+ 19.2	61	3.3	3	- 17.6
7	2300	4.9	71	+ .4	856	5.6	26	+ 31.5	88	4.7	3	- 26.1
8	768	1.6	76	- 1.4	212	1.4	21	+ 7.6	23	1.2	3	- 42.5
9	657	1.4	73	- 4.6	218	1.4	24	+ 14.7	28	1.5	3	- 9.7
10	5922	12.7	73	+ .5	2026	13.2	25	+ 13.1	157	8.4	2	- 27.6
11	3892	8.3	77	+ 2.9	1115	7.3	22	+ 34.8	56	3.0	1	- 54.5
12	1589	3.4	72	- 1.2	549	3.6	25	+ 9.8	59	3.2	3	- 35.9
13	2281	4.9	69	+ 3.6	954	6.2	29	+ 17.1	80	4.3	2	- 17.5
14	775	1.7	71	+ 1.3	289	1.9	26	+ 4.3	32	1.7	3	- 13.5
15	729	1.6	74	- .7	216	1.4	22	+ 25.6	42	2.2	4	- 16.0
16	1205	2.6	68	- 1.4	512	3.3	29	+ 13.3	45	2.4	3	- 10.0
17	1239	2.7	64	- 5.8	605	3.9	31	+ 5.0	89	4.8	5	- 9.2
18	1254	2.7	69	+ 4.9	520	3.4	29	+ 5.7	32	1.7	2	- 28.9
19	1627	3.5	83	- .9	187	1.2	10	- 5.6	148	7.9	7	+ 6.5
20	3985	8.5	76	- 1.9	961	6.3	19	+ 41.5	276	14.8	5	- 12.9
Super Region												
South	9321	20.0	75	+ 1.4	2412	15.7	19	+ 29.3	668	35.7	6	- 12.8
East	15464	33.1	72	+ 5.2	5519	36.0	26	+ 17.7	412	22.0	2	- 15.1
North	11239	24.1	74	+ .9	3571	23.3	24	+ 18.8	264	14.1	2	- 35.8
Central	5374	11.5	71	+ 1.2	2008	13.1	26	+ 13.8	213	11.4	3	- 22.8
West	5324	11.4	71	- .9	1824	11.9	25	+ 6.2	314	16.8	4	- 5.4
Statewide Totals	46711	100.0	73	+ 2.1	15349	100.0	24	+ 17.6	1904	100.0	3	- 17.2

SOURCE: Roster of Personnel, Texas Education Agency, 1979-80 through 1982-83.

NOTE: Number of teachers represents a count by full-time equivalents (FTEr). Totals may vary due to computer rounding or missing codes in the data files.

Districts with over 10,000 ADA showed the proportionately smallest concentration of federally supported basic skills teachers based on ADA grouping. With respect to geographic regions, East Texas had the least dependence on federal support for basic skills teachers.

Table 6: Number and Percent of Federally Funded Elementary Teachers by Select Basic Skills Subject Area, Size of District, ESC Region, and Super-Region for 1982-83

District Category	Reading			Language Arts			Mathematics			Generic		
	No. for 1982-83	% of all Reading Teachers	% Change from 1979-80	No. for 1982-83	% of all Lang. Arts Teachers	% Change from 1979-80	No. for 1982-83	% of all Math Teachers	% Change from 1979-80	No. for 1982-83	% of all Generic Teachers	% Change from 1979-80
Over 10,000	607	53.4	- 36.7	79	8.8	- 58.4	143	21.1	- 54.2	916	3.6	+ 4.2
5,000 - 9,999	191	71.3	- 19.7	20	23.5	- 60.6	21	22.8	- 70.4	67	1.7	- 17.3
1,500 - 4,999	545	68.6	- 12.5	62	12.1	- 15.1	151	30.0	- 12.2	298	2.9	- 9.7
1,000 - 1,499	97	59.5	- 25.4	5	5.6	+ 25.0	28	28.0	- 28.2	56	2.7	- 37.1
500 - 999	152	68.8	- 18.7	18	17.3	+ 12.5	40	30.5	- 4.8	124	4.0	- 22.0
Under 500	132	75.4	- 23.7	19	19.6	+ 90.0	24	27.3	- 36.8	115	3.9	- 11.5
ESC Region												
1	155	86.1	- 18.2	117	75.0	- 5.6	82	70.7	+ 15.5	119	7.6	- 32.0
2	154	83.2	- 11.0	4	10.0	+ 33.3	34	53.1	- 46.0	52	3.2	- 27.8
3	39	52.7	- 39.1	2	4.8	- 50.0	4	9.5	- 77.8	44	4.7	+ 76.0
4	140	27.1	- 35.2	1	.4	+100.0	6	2.4	- 78.6	363	1.4	+ .6
5	78	60.0	- 10.3	9	14.1	- 25.0	11	17.2	- 31.2	19	1.4	- 50.0
6	76	68.5	- 13.6	5	5.2	+ 25.0	16	16.0	- 30.4	49	2.9	- 38.0
7	89	62.2	- 16.0	8	10.7	- 33.3	15	42.7	- 32.7	72	2.9	- 16.3
8	58	63.0	- 6.5	5	6.0	- 37.5	28	33.3	+ 16.7	22	2.7	- 21.4
9	24	48.0	- 27.3	2	4.8	+200.0	16	26.7	- 5.9	10	1.6	- 16.7
10	157	66.7	- 29.6	4	.7	0	50	15.7	- 53.7	195	3.1	+ 6.6
11	52	68.4	- 26.8	0	0	0	12	41.4	- 25.0	44	1.1	- 55.1
12	81	58.9	- 27.8	9	13.2	+200.0	14	21.9	- 22.2	58	3.5	- 14.7
13	116	77.3	- 18.9	2	3.2	+200.0	14	24.1	- 26.3	79	3.8	- 25.5
14	16	87.8	- 29.4	0	0	0	3	17.6	- 57.1	18	1.9	- 33.3
15	65	83.3	- 4.4	1	4.8	- 95.0	7	25.9	0	34	3.9	- 10.5
16	69	54.3	- 32.4	2	4.5	- 50.0	21	39.6	- 22.2	41	2.8	+ 36.7
17	116	84.7	- 15.9	15	26.8	- 31.8	29	46.8	- 44.2	67	4.3	- 15.2
18	59	81.9	- 1.7	2	18.2	- 33.3	2	18.2	- 66.7	22	1.4	- 29.0
19	52	91.2	*	5	55.6	*	0	0	*	181	7.8	*
20	101	56.4	- 31.4	11	22.4	- 60.7	20	27.4	- 69.7	85	2.8	- 31.5
Super Region												
South	449	72.7	- 29.4	134	46.7	- 15.7	140	47.5	- 35.8	300	4.2	- 24.2
East	383	45.9	- 22.9	23	4.5	- 17.9	68	13.6	- 42.9	503	3.1	- 10.8
North	291	64.8	- 25.2	11	1.6	- 8.3	106	21.5	- 35.8	271	2.3	- 15.6
Central	300	73.2	- 20.4	12	7.3	- 47.8	38	22.9	- 25.5	189	3.4	- 20.9
West	296	75.3	*	24	18.0	*	52	39.7	*	311	4.5	*
Statewide Totals	1728	62.5	- 25.4	208	11.6	- 41.6	412	25.8	- 19.1	1584	3.3	- 5.5

SOURCE: Roster of Personnel, Texas Education Agency, 1979-80 through 1982-83.

NOTE: Number of teachers represents a count by full-time equivalents (FTEs). Totals may vary due to computer rounding or missing codes in the data files. An asterisk [*] has been used to denote inappropriate change comparisons resulting from a difference in reporting by El Paso ISD between 1980-81 and 1981-82, dramatically affecting specific totals for Region 19 and the West.

Table 7: Number and Percent of Federally Funded Secondary Teachers by Select Basic Skills Subject Area, Size of District, ESC Region, and Super-Region for 1982-83

District Category	Reading			Language Arts			Mathematics			Generic		
	No. for 1982-83	% of all Reading Teachers	% Change from 1979-80	No. for 1982-83	% of all Lang. Arts Teachers	% Change from 1979-80	No. for 1982-83	% of all Math Teachers	% Change from 1979-80	No. for 1982-83	% of all Generic Teachers	% Change from 1979-80
Over 10,000	39	3.1	-71.3	43	.6	-55.2	16	.3	-74.2	38	3.4	- 38.7
5,000 - 9,999	42	15.7	-20.8	15	1.4	-50.0	8	1.0	-33.3	8	6.7	+166.7
1,500 - 4,999	81	15.5	-48.4	37	1.3	-35.1	28	1.3	-36.4	10	7.0	- 58.3
1,000 - 1,499	33	28.2	-36.5	11	1.7	+22.2	8	1.7	-61.9	5	15.2	- 54.5
500 - 999	39	35.8	-43.5	16	2.0	-27.3	11	2.0	-52.2	15	8.6	0
Under 500	16	50.0	-33.3	15	2.5	- 6.2	5	1.1	+25.0	10	5.6	+ 66.7
ESC Region												
1	39	30.7	- 9.3	38	4.7	-47.9	18	3.5	-30.8	10	19.2	+ 25.0
2	25	19.4	-26.5	3	.7	-25.0	5	1.4	-28.6	4	22.2	- 42.9
3	7	12.5	-61.1	4	1.4	+33.3	2	1.0	0	0	0	0
4	8	1.7	-55.6	2	.1	-33.3	6	.3	-53.8	5	3.8	- 88.4
5	4	5.3	-66.7	2	.5	-33.3	3	1.0	+50.0	0	0	0
6	18	21.2	-28.0	9	2.1	0	2	.7	-66.7	8	6.5	+ 14.3
7	18	14.6	-25.0	8	1.2	-42.9	11	2.4	-21.4	2	2.0	- 71.4
8	4	14.3	-33.3	1	.4	0	1	.7	-83.3	5	25.0	+ 25.0
9	1	5.9	-80.0	0	0	-200.0	0	0	-200.0	1	4.8	- 66.7
10	7	2.4	-75.0	4	.2	-31.4	3	.2	-84.2	1	2.6	- 50.0
11	14	6.6	-76.7	0	0	-100.0	3	.4	-70.0	2	2.9	- 33.3
12	11	19.0	-62.1	7	1.5	+40.0	4	1.3	-55.6	5	16.1	+ 66.7
13	13	9.0	-31.6	16	2.4	+14.3	4	.8	-50.0	6	11.3	+100.0
14	3	10.3	-72.7	0	0	0	1	.6	+100.0	0	0	0
15	14	35.8	0	0	0	-500.0	2	1.3	0	5	25.0	- 54.5
16	7	12.5	-22.2	5	1.3	-54.5	2	.7	-33.3	3	23.1	+200.0
17	13	18.6	-53.6	7	1.8	-41.7	3	1.0	-40.0	8	17.0	+166.7
18	9	16.4	-52.6	5	1.4	-16.7	3	1.1	-40.0	2	3.6	+200.0
19	5	10.4	*	2	1.0	*	0	0	*	15	1.7	*
20	26	14.7	-51.9	18	1.6	-56.1	3	.4	-87.0	3	7.9	- 75.0
Super Region												
South	97	19.8	-34.9	63	2.4	-47.5	28	1.5	-51.7	17	14.0	- 37.0
East	48	6.3	-39.2	21	.5	-27.6	22	.7	-37.1	15	4.1	- 73.7
North	26	4.8	-73.7	5	.2	-72.2	7	.3	-81.1	9	6.0	- 25.0
Central	41	15.2	-43.8	23	1.5	+ 4.2	11	1.0	-42.1	16	11.7	- 5.9
West	34	14.8	*	19	1.4	*	8	.8	*	28	2.8	*
Statewide Totals	255	11.1	-48.9	143	1.1	-40.4	82	.9	-52.6	90	5.0	- 29.7

SOURCE: Roster of Personnel, Texas Education Agency, 1979-80 through 1982-83.

NOTE: Number of teachers represents a count by full-time equivalents (FTEs). Totals may vary due to computer rounding or missing codes in the data files. An asterisk [*] has been used to denote inappropriate change comparisons resulting from a difference in reporting by El Paso ISD between 1980-81 and 1981-82, dramatically affecting specific totals for Region 19 and the West.

As districts statewide begin to make preparations for implementing new curriculum requirements, it is of interest to track the secondary staffing patterns over the past four years in each of the major content areas. Figure A presents statewide staffing for secondary teachers (in FTEs) in content areas most likely to be affected by curriculum changes. As noted in the November 1982 Teacher Availability Report, the number of teachers (in FTEs) reported by school districts in other languages and fine arts is significantly lower than in any other disciplines. This situation continued through the 1982-83 school year with 1,615 other language teachers and 4,661 fine arts teachers reported statewide. It is also important to recognize how relatively few business teachers (2,566) were reported statewide in 1982-83. The largest upward shifts in the number of teachers (in FTEs) by specific teaching fields from 1979-80 to 1982-83 were in English language arts (397), health/physical education (381), mathematics (379), social studies (298), vocational education (285), and science (277). While statewide findings are encouraging, there are categories of districts which continue to show disproportionately smaller numbers of teachers in specific content areas. For example, there were only 76 fine arts teachers (in FTEs) and 18 other language teachers (in FTEs) reported for districts with less than 500 ADA in 1982-83. Based on geographic location, ESC Regions VIII (Mount Pleasant), IX (Wichita Falls), and XIV (Abilene) each were found to have fewer than 20 other language teachers (in FTEs) for all districts in their respective regions. These indicators are significant as districts consider staffing needs based not only on enrollment but also on emerging curriculum requirements.

SUMMARY

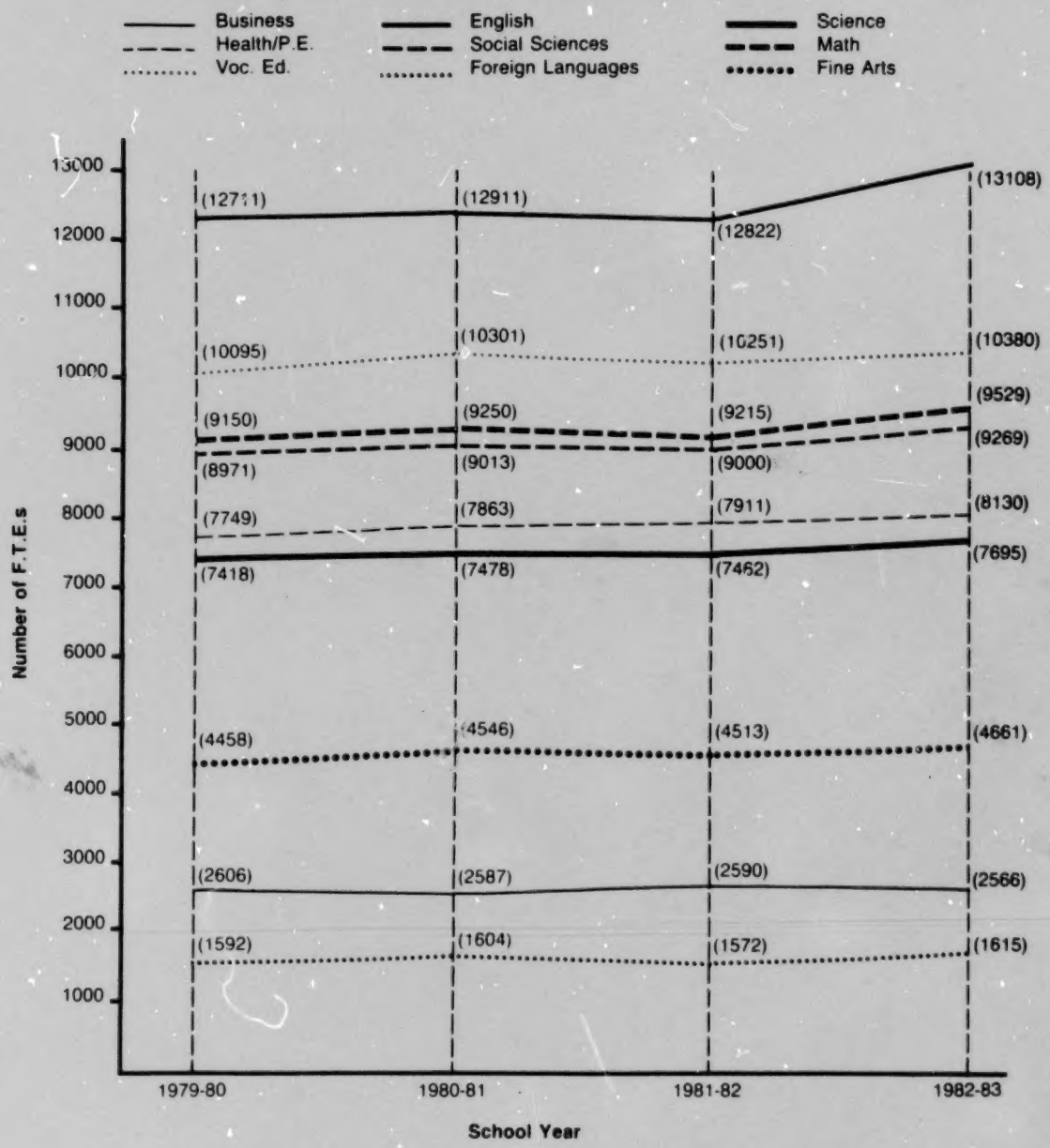
When examining the period of 1979-80 to 1982-83, it is apparent that there continues to be a larger increase in the number of teachers employed (in FTEs) than was required merely to keep up with enrollment increases. It is not clear whether this situation occurred because school districts were compensating for losses in the teaching force during the mid and late 1970's or that they have been improving their instructional staffs to reflect curriculum changes. However, based on the sizeable variance among groupings of districts by size and location, there continues to be reason to believe those with certain characteristics may be experiencing unique teacher supply and demand problems.

The November 1982 Teacher Availability Report indicated that teachers supported by federal funds might provide a source of supply if these funds were reduced. Prior to the 1981-82 school year, indications were that federal funds (Chapter I and Chapter II) might be substantially reduced. As a response to what seemed to be impending budget cuts, school districts appear to have chosen to keep teachers previously paid for out of federal funds by using alternative sources of support rather than releasing them. This effort to maintain local staffing levels regardless of funding source often meant reassignment in terms of specific teaching duties (i.e., traditional self-contained classroom assignment versus pull-out, small- group, remediation work).

There has been no attempt in this chapter to ascertain the extent to which staff identified on personnel rosters were fully certified. The fact that districts were able to place teachers in classrooms does not ensure that all personnel would meet standards the Agency might establish when considering the concept of "teacher shortage." In addition, there was no determination made of the extent to which a shortage may have existed in the base year 1979-80.

Figure A:

Four-year trend in number of teachers at the secondary level with primary teaching responsibilities in an area covered by H.B. 246.



CHAPTER THREE

SURVEY OF SCHOOL DISTRICT STAFFING CONDITIONS IN 1983-84 SCHOOL YEAR

INTRODUCTION

The November 1982 Teacher Availability Report served to broaden the general level of information concerning district staffing of teachers. Sampling limitations meant that the data from that study had limited statewide generalizability. In this report an attempt was made to collect district- based data in such a manner that the results can be generalized both statewide and to several substate configurations of districts. This chapter presents information obtained through a survey of current and projected conditions of teacher availability in a statewide sample of school districts.

METHODOLOGY

For this report, a survey conducted by telephone was selected as the method for data collection. Such a methodology, when conducted properly, yields reliable responses and a high response rate at relatively low cost. To conduct the survey, a questionnaire was prepared for collecting data on the 1983-84 school year. Its focus was:

- the number and teaching area of openings for the 1983-84 school year
- the causes of current and future openings
- the district turnover rate
- applications for teaching positions
- sources of teaching staff
- use of Temporary Classroom Assignment Permits (TCAP), Emergency Permits (EP), and Special Assignment Permits (SAP)

Additional questions solicited district plans concerning the effect of the implementation of TEC 21.101 (H.B. 246) on current staffing patterns and future staffing needs.

A sample of 200 school districts, balanced for size and geographic distribution, was drawn from the 1071 Foundation School Program districts. For statistical purposes, the education service center regions were grouped into five larger geographic areas. These are the 'super regions' identified in Chapter One. With respect to ADA classification, districts were grouped as follows: 0-499 ADA; 500-999 ADA; 1000-1499 ADA; 1500-4999 ADA; 5000-9999 ADA; and 10000 or more ADA.

A copy of the questionnaire (Appendix A), accompanied by a letter of instruction from the Commissioner's office, was mailed to the superintendent of each district in the sample. Responses to the questionnaire were collected through a telephone survey conducted by staff members of the Agency's Department of Planning and Research in December 1983. Responses were obtained from 199 districts. This number represents a response rate of greater than 99 percent. Such a response rate ensures that statewide generalizations can be drawn with a high degree of confidence. The data obtained from the survey were then analyzed by calculating frequency distributions and other descriptive statistics. Statewide and substate (geographic and size groups) estimates were made by weighting responses using calculated sample weights for each responding district.

FINDINGS

Information dealing with the number of openings, applicants, and personnel hired for the 1983-84 school year was obtained. It is estimated that districts statewide had over 20,000 openings for the 1983-84 school year. Table 8 details these openings by teaching field. For these openings, districts received over 180,000 applications. Recognizing that the number of applications reported represents a multiple count, since many prospective teachers apply in several different school districts, the actual unduplicated count of applicants is probably much smaller. At present, there is no estimate of that number. Survey results indicate that 22 percent of the districts reported an increase in the number of applications, while 64 percent indicated that the number of applications was about the same as in the past. Only 12 percent indicated a decrease in the number of applications, mainly districts located in West Texas and South Texas with an ADA less than 1000. In Table 8, a ratio of applications received to openings is also presented. This ratio should not be interpreted to indicate that the actual supply of teachers in each field exceeds the number of openings that districts have. It does, however, point to the relative availability of teachers in the various teaching fields. For example, the data indicate that the availability of business teachers is greater than the availability of mathematics or science teachers. The overall applications-to-openings ratio ranged from 12.6 in the North Texas to 4.5 in South Texas and from 12.0 in districts with over 10,000 ADA to 4.1 in districts with 5000-9999 ADA.

Of the new personnel hired, approximately one-third had no previous teaching experience. This percentage was constant across geographic regions and size groupings. Furthermore, approximately 10 percent of teachers hired for the 1983-84 school year were individuals returning to the teaching profession.

Of the more than 20,000 openings, approximately 760 positions had not been filled on a permanent basis by the beginning of the 1983-84 school year. This "shortage" represents approximately four percent of the openings statewide. Of the new personnel hired for the 1983-84 school year, about 15 percent were less-than-fully-qualified. Table 8 contains the number of openings filled with less-than-fully-qualified personnel and the percent of new employees who were less-than-fully-qualified. As is apparent in teaching fields such as secondary mathematics, science, and bilingual education, which have a lower application-to-opening ratio, a greater percentage of the personnel assigned to fill openings were less-than-fully-qualified. This generalization is somewhat misleading for vocational education since in the industrial areas of vocational education, the qualifications for certification are different from those in all other teaching areas. Most of the vocational teachers in industrial areas enter the profession through the Special Assignment Permit route.

Table 8: Openings, Applications to Openings Ratio, Number of Openings Filled with Less Than Qualified Personnel

Teaching Fields	No. of Openings	Applications to Openings Ratio	No. of Openings Filled with Less-Than-Qualified Personnel	% of New Personnel Who Were Less-Than-Qualified
PreK-K	840	4.4	145	20
Elementary	5311	8.1	234	5
Special Education	2628	3.2	415	18
Bilingual	1077	1.8	432	47
ESL	374	1.7	359	100
Secondary				
Fine Arts	777	7.3	54	7
Business	236	11.0	18	8
Health/PE	993	8.6	77	9
Foreign Languages	330	6.4	47	17
Social Studies	952	10.7	134	16
Mathematics	1661	2.4	284	20
Science	1242	3.6	224	21
English	1726	5.6	144	9
Vocational Education	883	4.6	256	34
Other	1161	11.9	154	15
Total	20191	----	2977	15

NOTE: Other includes counselors and teachers not otherwise classified. Total openings includes 1904 coaches whose teaching assignment is included in the table.

Emergency Permits are used most frequently to cover classes for which no fully-qualified teacher could be found (Table 9). Sixty-one percent of the districts indicated use of Emergency Permits for the 1983-84 school year, which represents approximately 3500 teachers. TCAPs were used by 57 percent of the districts and Special Assignment Permits were used by 40 percent. These percentages do not total 100 since many districts employ more than one method at any one time.

Table 9: Methods used to cover classes for which fully qualified personnel could not be hired

METHOD	PERCENT OF DISTRICTS USING METHOD
Cancel course	8
Increase class size of other classes	8
TCAP existing teacher to teach course	57
Use Special Assignment Permit	40
Use Emergency Permit	61
Reassign staff	23
Fill temporarily with substitute	13
Coop with another district	3
Other methods	4

Districts reported 11.5 percent as the average turnover rate for the 1982- 83 school year. Districts in West Texas had the largest rate, 13 percent, and districts with an ADA greater than 5000 had the lowest rate, eight percent. Statewide, 75 percent of the districts indicated that the rate was the same or lower than in the past while only districts with less than 1000 ADA indicated that the turnover rate was higher than the rate for 1981-82. It is important to note that turnover at the district level includes not only those who leave due to attrition (death, retirement, and leaving the profession) but also those who move to another district or are promoted. Because turnover at the district level includes such a variety of types of employee loss, it will usually be higher than statewide attrition.

Districts reported that the loss of teachers due to spouse relocation was the single leading cause of vacancies for the 1983-84 school year. This reason was followed by enrollment growth and teachers moving to another district for better pay or benefits as the next major causes (Table 10). There appears to be little difference among the geographic or size groupings with respect to the causes of vacancies. When asked to speculate about the leading cause of future vacancies, most districts cited moving to another district for better pay or benefits and enrollment increases. Again, there was little variance across geographic or size groupings.

Table 10: Causes for Vacancies for the 1983-84 School Year

MAJOR CAUSES	PERCENT OF VACANCIES
Relocation due to spouse relocation	16
Moving to another district for better pay or benefits	13
Enrollment growth	13
Retirement	12
Leaving to have or raise children	7
Teachers leaving to take a job in another profession	7
Promotion	3
Death	1
Don't know	6
Other reasons	22

Superintendents reported that the most frequent reason given by newly hired teachers for coming to their district was its reputation. Some recognized that newly hired teachers gave "district reputation" as a reason only as part of the employment interview although some other reason may underlie their choice. Spouse relocation and desirability of the community were also cited frequently. Higher pay and or benefits was one of the least frequently cited reasons for teachers choosing a particular district for employment.

The survey surfaced many disparate facts which seem to bear on the teacher availability issue. Future analysis will be necessary to determine their role in the whole teacher availability picture. They include:

- Fewer than six percent of the districts reassigned administrative personnel to teach classes for which no teacher could be found.
- More than two-thirds of the new teachers hired for the 1983-84 school year were not residents of the district at the time of hiring.
- About six percent, or approximately 1,200, of the new teachers hired for the 1983-84 school year were from out-of-state.
- One-half of the districts indicated that at this time they were not sure how current electives would be affected by the implementation of TEC 21.101. However, there is some indication that many will attempt to keep current electives and either hire new staff or reassign current staff to teach the required courses.
- About two-thirds of the districts indicated that as a result of the TEC 21.101 curriculum revision additional staff persons would need to be hired. A greater percent of the new staff needed for conducting courses required for graduation is in districts with smaller ADAs and those located in East Texas and South Texas. The fields expected to require the greatest number of additional teachers are mathematics and science (Table 11).

Table 11: Estimated Additional Teachers needed as a Result of TEC 21.101 (H. B. 246)

TEACHING FIELD	ESTIMATED NUMBER NEEDED
Mathematics	720
Science	480
Foreign Languages	320
Social Studies	20
Health/Physical Education	30
Fine Arts	230
English	320
Business	60
Vocational Education	70

SUMMARY

Ninety percent of the districts hired at least one new teacher for the 1983- 84 school year for a total of more than 19,000 new teachers. Of these, more than one-third were beginning teachers while 10 percent were teachers returning to the profession.

Spouse relocation, enrollment growth and moving to another district for better pay or benefits account for 42 percent of the openings. Leaving the profession to take a job in another profession accounted for only seven percent of the openings.

Statewide, 23 percent of the openings in 1983-84 were for elementary teachers, 11 percent were for special education teachers, seven percent were for secondary mathematics teachers, seven percent were for secondary English teachers, five percent were for secondary science teachers, and nine percent were for coaches.

Approximately 15 percent (about 3000) of the new teachers hired for the 1983-84 school year were less-than-fully-qualified. Of those, 25 percent were in bilingual education and English as a Second Language. However, 70 percent of the districts hired no more than three less-than-fully-qualified persons for these teaching positions.

The average turnover rate at the district level was 11.5 percent. Fifty percent of the districts indicated that their turnover rate for 1982-83 was about the same as in the 1981-82 school year.

The application-to-opening ratio was lowest in the areas of bilingual education, ESL, secondary mathematics, and secondary science. Eighty-eight percent of the districts reported that the number of applications for teaching positions for the 1983-84 school year was about the same or greater than the number received in 1982-83. Only 12 percent indicated that fewer applications were received.

Forty percent of the districts indicated that future vacancies are expected to result from either spouse relocation or moving to another district for better pay. However, over 25 percent of the districts expect increased demand for staff as the result of enrollment growth.

CHAPTER FOUR

STUDY OF TEACHER EDUCATION INSTITUTIONS

INTRODUCTION

The mandate for an in-depth study of teacher availability in Texas implied specific areas for research, one being a study of institutions of higher education which supply teachers to our public schools. Points of focus include: enrollment and graduation trends, characteristics of prospective teachers, availability of areas of specialization, trends in writing and completing deficiency plans, and other factors important in determining the future supply of teachers.

There are currently 65 colleges and universities in Texas approved by the Agency to provide teacher education. While the 32 public institutions provide the bulk of our teacher supply, the 33 private colleges and universities are also a significant source of teachers. The study takes a look at several elements relating to availability of candidates in the various certification categories, endorsement areas, and teaching fields.

METHODOLOGY

Careful consideration of existing data sources led to the conclusion that information required to provide the basis for analysis of teacher supply was not available. For this reason, data were requested directly from the 65 teacher education institutions. These data were to be augmented by auxiliary sources, as available. A survey instrument was designed, reviewed, and tested on a limited basis. A copy is provided in Appendix B.

The survey questionnaire was sent by the Commissioner of Education to the deans of education or department chairman at each of the 65 colleges and universities. As the result of intensive telephone follow-up, 63 of the 65 institutions responded, although not every question in the survey was answered by every respondent. The two institutions not included in the final report would have increased some of the state totals by no more than one-half of one percent.

Recent enrollment, graduation, and certification trends were examined to determine if and how they varied by certification or endorsement areas and certain institutional characteristics. Other areas of examination included the perceived impact of competency testing, student teaching requirements, writing and completion of deficiency plans, and trends in admission and graduation standards. Finally an attempt was made to determine the relative interest by school districts in obtaining applicants with specific credentials or background. These placement data were provided for the most part by placement officers in the 63 reporting institutions.

The data were then analyzed by calculating frequency distributions and corresponding cross-tabulations involving institutional variables. Descriptive statistics focusing on recent trends have been summarized in the text and in the figures and tables.

FINDINGS

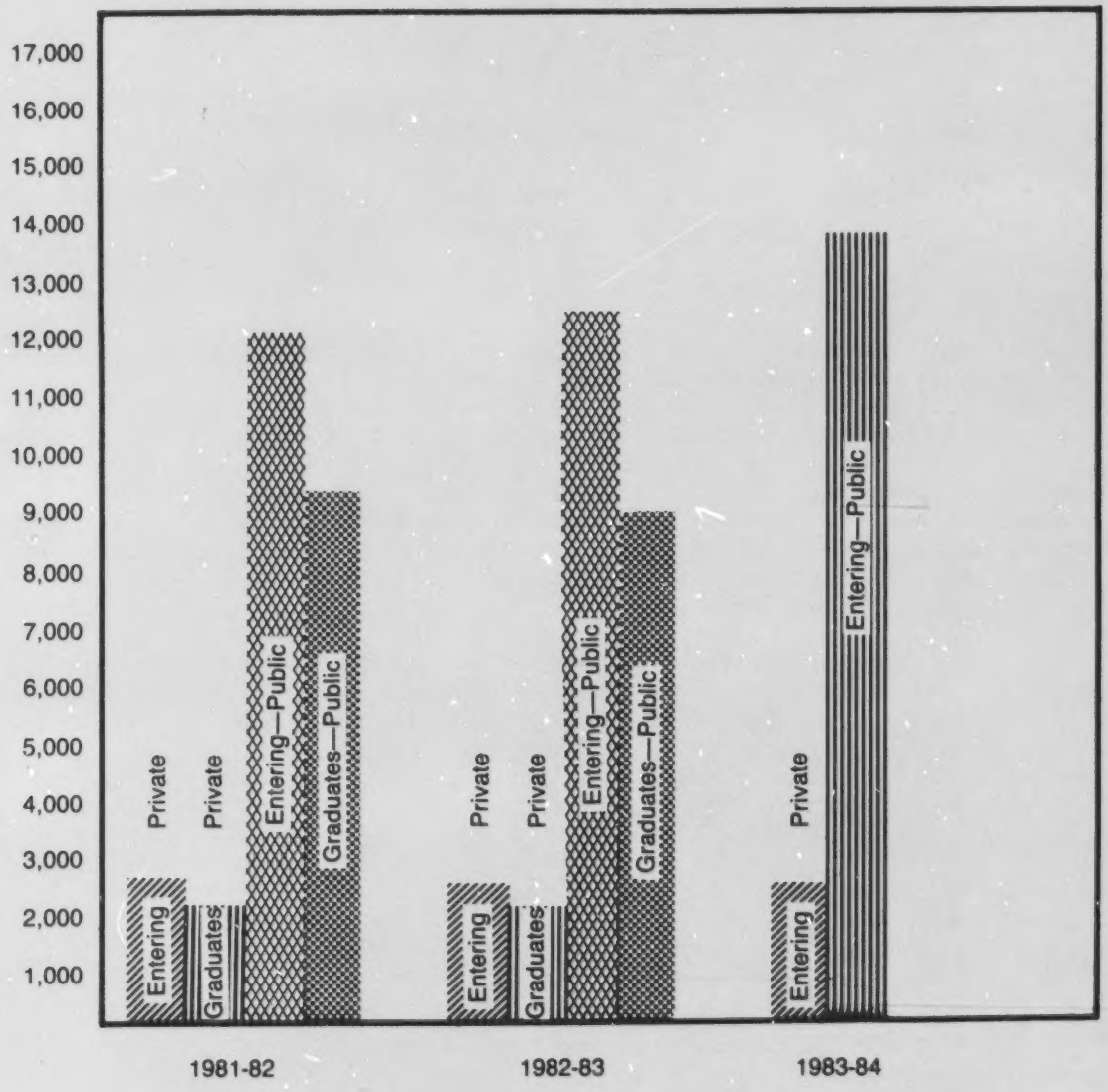
Enrollment Trends (Figure B)

Final survey findings reveal an upward trend in education enrollments. The overall number of students admitted to teacher education programs in 1983-84 fall semester was 16,100 or 4.6 percent above 1982-83 and 7.4 percent above 1981-82. This increase amounts to 1,113 students over the two-year period. It is interesting to note that the increase for the two-year comparison was taking place in the public colleges and universities. Private institutions declined 2.3 percent from 1981-82 to 1983-84 while public institutions reported an enrollment growth of 13.5 percent for the same period.

FIGURE B

Number of Entering Education Students Compared To Number of Education Graduates by Year and Type of Institution *

(63 of 65 Senior Colleges and Universities)
31 Public
32 Private



* Entering students based on Fall Semester. Graduates are for academic year and include only those recommended for teacher certification.

Table 12: Program Selections by Entering Education Students, Professional Certification Categories, Endorsement Categories, and Teaching Fields (1)

Category/Field	Fall 82-83			Fall 83-84			% of Change
	Public	Private	Total	Public	Private	Total	
PreK-K	848	58	906	795	126	921	+ 1.6
Elementary	4367	727	5094	4413	1400	5813	+ 14.1
Secondary							
English	607	179	786	627	184	811	+ 3.2
Mathematics (2)	396	55	451	526	98	624	+ 38.4
Science (3)	607	85	692	837	135	972	+ 40.5
Fine Arts	378	104	482	371	201	572	+ 18.7
Vocational Education	266	23	289	264	74	338	+ 16.9
Social Studies	777	195	972	783	212	995	+ 2.4
Foreign Language	176	50	226	184	71	255	+ 12.8
Business	244	60	304	214	88	302	- 0.7
Health/PE	1260	176	1436	1314	332	1646	+ 14.6
Total Secondary	4649	732	5381	5114	1249	6363	+ 18.2
Special Education	775	143	918	697	234	931	+ 1.4
Bilingual Education (4)	231	65	296	260	97	357	+ 20.6
ESL (5)	53	1	54	132	9	141	+161.1
Other	623	136	759	769	224	993	+ 30.8

1. Columns are not totaled due to selection of two or more fields by 25% of students in 82-83 and 32% in 83-84.

2. The increases in Mathematics as a selection were greatest at Texas A&M U, UT/Arlington, and UT/Austin, where a total increase of 117 represented 68% of the statewide increase.

3. The increases in Science as a selection were greatest at Texas A&M U, UT/Arlington, UT/Austin, and West Texas State U/Canyon, where a total increase of 226 represented 81% of the statewide increase. A total of 28 institutions showed a small increase in enrollment; nine remained the same, and 17 registered some decrease in Science enrollment. Nine institutions had no students enter Science.

4. The 20.6% increase in Bilingual was largely because of gains at U of Houston/Houston, UT/Arlington, Laredo State U, Houston Baptist College, and Pan American U/Edinburg.

5. The largest suppliers of ESL education in 83-84 are: Sam Houston State U, Sul Ross State U, UT/Arlington, UT/Austin, U of Houston/Houston, and West Texas State U/Canyon.

Certification Categories, Endorsements and Teaching Fields (Table 12)

While the overall comparison of entering students shows a modest increase over the two-year period, a significant increase was reported in choices for teaching fields and endorsements in shortage areas. Secondary education comparisons of 1983-84 program selections with 1982-83 show a 38.4 percent increase in mathematics, 40.5 percent increase in sciences, 20.6 percent increase in bilingual education, and 161.1 percent in ESL. The increase in ESL amounted to 87 new students. While relatively high percentage increases do not necessarily translate into large absolute numbers, they do indicate significant upward trends. Some of the increased interest in mathematics as a teaching field may be attributed to emphasis placed on recruitment by certain institutions. For example, Texas A&M University, which is currently educating more mathematics teachers than any other institution, reports an active program to enhance this teaching field. The only subject area showing an absolute decline in enrollment was business education with a drop from 304 students in 1982-83 to 302 in 1983-84. PreK-K choices remained nearly level over the two-year period,

with a slight increase of 1.6 percent. Private colleges and universities increased their enrollments in preK-K by 117.2 percent (68 students) in 1983-84. While their overall enrollments are comparatively small, they offset the decline shown in public institutions for preK-K in 1983-84. A total of 39 institutions served the preK-K area of certification.

Survey results pinpoint one interesting trend in elementary education. The private institutions, while declining 2.3 percent in overall education enrollment, showed an increase of 92.6 percent in their enrollment for elementary education. Enrollment in elementary education in public institutions gained only 1.1 percent. Student selections for elementary education statewide show an overall increase of 14.1 percent or approximately 719 additional students in 1983-84.

Table 13: Top Five Institutions by Specific Certification, Endorsement, or Teaching Field Categories

Rank ordered by the number of students admitted or in the process of being admitted in 1983-84 (Fall)

PreK-Kindergarten		Foreign Languages	
Texas A&M U	170	UT/Arlington	40
Sul Ross State U	100	Texas A&M U	35
U of Houston/Clear Lake City	88	Houston Baptist College	13
Sam Houston State U	70	UT/Austin	12
Corpus Christi State U	65	Pan American U/Edinburg	10
Total	493 = 54%	Total	110 = 43%
State Total	921	State Total	255
Elementary		**Bilingual Education**	
Texas A&M U	850	Pan American U/Edinburg	50
U of Houston/Clear Lake City	599	Houston Baptist College	44
UT/Arlington	431	Laredo State U	31
Abilene Christian U	329	Pan American U/Brownsville	29
U of Houston/Houston	250	UT/Arlington	24
Total	2459 = 42%	Total	178 = 50%
State Total	5813	State Total	357
English		**Special Education**	
Texas A&M U	148	Sam Houston State U	100
UT/Arlington	100	U of Houston/Clear Lake City	100
Angelo State U	36	Southwest Texas State U	95
West Texas State U	34	West Texas State U	58
U of Houston/Houston	30	Abilene Christian U	48
Total	348 = 43%	Total	401 = 43%
State Total	811	State Total	931
Mathematics		**Vocational Education**	
Texas A&M U	168	Southwest Texas State U	55
UT/Arlington	86	Abilene Christian U	49
West Texas State U	39	Sam Houston State U	48
Sam Houston State U	28	Texas A&M U	38
Angelo State U	26	Texas A&I U	34
Total	347 = 56%	Total	224 = 66%
State Total	624	State Total	338
Science		**English as Second Language (ESL)**	
Texas A&M U	354	UT/Austin	20
UT/Arlington	166	U of Houston/Houston	19
Angelo State U	38	Sam Houston State U	15
West Texas State U	38	Sul Ross State U	15
UT/Austin	36	U of Houston/Victoria	13
Total	632 = 65%	Total	82 = 58%
State Total	972	State Total	141

Graduation Trend

Sixty-three institutions reported that graduates recommended for provisional certification declined four percent from 11,396 in 1981-82 to 10,958 in 1982-83. The two institutions not included in these comparisons would have increased the total for 1982-83 to approximately 11,050. These findings are consistent with the long-term trend of declining numbers of newly certified teachers.

Teachers Who Return to College

Significant information about the numbers of teachers returning to teacher education institutions to remove deficiencies, obtain graduate degrees, secure additional endorsements, or otherwise improve their professional skills was collected in this study. The primary findings are summarized in Tables 14 and 15. In summary, the number of teachers with provisional certificates who removed deficiencies stayed at a constant level for the 1982-83 and 1983-84 years. There was a 0.9 percent decrease in enrollment of certified teachers who enrolled to earn graduate degrees, secure additional endorsements, and/or teaching fields. It is also noteworthy that seven public universities served 47 percent of the total of 8,429 who enrolled statewide.

Table 14: Number of Certified Teachers Enrolling for Graduate Degree Programs, Additional Endorsements, and/or Teaching Fields

Institution	1982-83		1983-84		
	Number	Percent	Number	Percent	% Change from 1982-83
Corpus Christi State University	525	6.2	570	6.7	+ 8.6
Pan American University/Edinburg	378	4.4	370	4.4	- 2.2
Prairie View A&M University	495	5.8	528	6.3	+ 6.7
Sam Houston State University	613	7.2	622	7.4	+ 1.5
Texas A&I University	478	5.6	502	6.0	+ 5.0
Texas A&M University	625	7.3	659	7.8	+ 5.4
University of Houston/Clear Lake City	604	7.1	711	8.4	+ 17.7
All Other	4791	56.3	4467	53.0	- 7.3
TOTAL (63)	8509	100.0	8429	100.0	- 0.9

Demographic Information

Each of the 63 institutions provided an estimate of the percent of education students who live and work in their local areas. Definition of the "local area" was left to local respondents. The results confirmed that private colleges tend to draw students from a wider geographic radius while public institutions attract a higher percentage of education students from within a daily commuting range: 32 private colleges reported percentages with a mean of 45 percent for students from the local area, while 31 public institutions gave estimates with a mean of 72 percent for education students from the local area. The geographical distribution of graduates follows a rather consistent pattern with a higher percentage from private colleges working in districts located away from the local college area and county of residence. Graduates of public institutions tend to find jobs and stay in their county of residence or the metropolitan area served by the institution. It should be remembered that these percentages are approximations only, since in numerous cases the county of residence may be the same as the location of the institution. Private colleges reported 35 percent of their graduates teach in districts outside the college area and away from their county residence; public colleges and universities reported that 25 percent of their graduates teach in other areas. This wider dispersal of graduates from private institutions, along with their smaller numbers, may help account for the fact that few of the private institutions were cited in the school district survey as primary sources of teacher supply.

Table 15: Teachers With Provisional Certificates Enrolled To Remove Deficiencies

Institution	1983-84 Number	Percent
Pan American U/Edinburg	108	4.7
Southwest Texas State U	230	10.0
Texas Tech U	150	6.6
Texas Woman's U	140	6.1
U of Houston/Clear Lake City	175	7.7
U of Houston/Houston	165	7.2
All Other	1317	57.7
Total	2285	100.0

NOTE: There was no significant change (0.08%) between 1982-83 and 1983-84 in total number of teachers enrolled to remove deficiencies.

INSTITUTIONAL VARIABLES

Institutional Deficiency Plans

According to the November 1982 Teacher Availability Report, teacher education institutions see requirements for certification as the most dramatic evidence of their academic autonomy. Most institutions have requirements for their approved certification programs which exceed the minimum standards established by the State Board of Education.

Table 16: Deficiency Plans Written and Percent Completed by Year

Institution	1981-82		1982-83		1983-84	
	No. Written	Percent Completed	No. Written	Percent Completed	No. Written	Percent Completed (Est.)
PUBLIC						
Pan American U/Edinburg	798	30	694	25	444	25
Sam Houston State U	850	50	1000	50	900	50
Southwest Texas State U	1129	16	1284	16	1399	16
U of Houston/Houston	1000	10	1400	10	1100	10
North Texas State U	916	33	1206	33	336	66
All Other Public	2971	49	3036	93	4879	40 (mean) *
TOTAL PUBLIC (31)	7664	46	8620	82	9058	38 (mean) *
PRIVATE (32)	681	39	813	40	717	44 (mean) *
TOTAL (63)	8345	42	9433	61	9775	41 (mean) *

* The percent presented for aggregated totals represents a mean percent.

Their reasons generally center on the strong liberal arts influence maintained by institutions of higher education and the prerequisite requirements placed on students by academic departments. In order to meet the State Board of Education and institutional requirements in fields not included in their original certification program, teachers must earn additional hours in other programs required for new teaching assignments or for other professional growth reasons. Deficiency plans written at the teacher education institution provide a well defined system for teachers to pursue additional qualifications. Five public universities wrote 59 percent of the deficiency plans in 1982-83. The total number statewide has increased 17 percent over 1981-82. A smaller increase is shown between 1982-83 and 1983-84, probably because of the mid-year point at which information for this report was collected.

Among the five major institutions detailed in Table 16 there is a wide range of completion rates. Generally speaking, the study reveals that the smaller or private institutions tend to have a higher rate of completion than the large public universities. There are some exceptions to this tendency, however, as noted in the following data for which the completion rate given covers a three-year average: Corpus Christi State University, 73 percent; Lamar University, 59 percent; Prairie View A&M University, 75 percent; and Texas Woman's University, 48 percent. Each of the four universities reported more than 500 deficiency plans written. While the study did not explore the specific relationship between institutional requirements and state minimum standards, the November 1982 Teacher Availability Report found that institutions requiring only state minimums generally report higher completion rates.

Variables in Grade Requirements

The survey of 63 institutions revealed that over the three-year period there was only a slight change in Grade Point Average (GPA) requirements for entering schools of education. The range in 1981-82 and 1982-83 was 2.0 to 2.5 with a mode of 2.25. In 1983-84 the range was 2.0 to 2.75 with a mode of 2.25.

Variations in GPA for graduation from schools of education were small. The range for all three years was 2.0 to 3.0 with a mode of 2.25. There is an increasing trend for more institutions to require a higher GPA in teaching field subjects. For example, North Texas State University, while requiring an overall 2.0 for graduation, will require 2.75 for teaching field subjects beginning in the fall of 1984. Generally speaking, the private institutions require a slightly higher GPA for graduation than do the public institutions. For example, Austin College, a private institution, reported a unique program for teachers, requiring a master's degree with a GPA of 3.0 in order to be eligible for a certification recommendation.

Variables in Scholastic Aptitude Test (SAT) Scores and American College Testing Program (ACT) Scores

Approximately 38 percent of the institutions were able to respond with at least partial data on scores. While data quality does not meet standards for an accurate score profile, they are sufficiently clear to establish two observations. (1) There was an upward trend in the SAT scores for 1983-84 over 1982-83 (this upward trend applied to verbal, mathematics and composite SAT scores). The trend was slightly downward for a smaller number of institutions reporting ACT scores. (2) SAT scores for entering education students in private institutions were higher than for those in public institutions. The difference was approximately 63 points on the verbal test and 59 points on the mathematics test.

Student Teaching

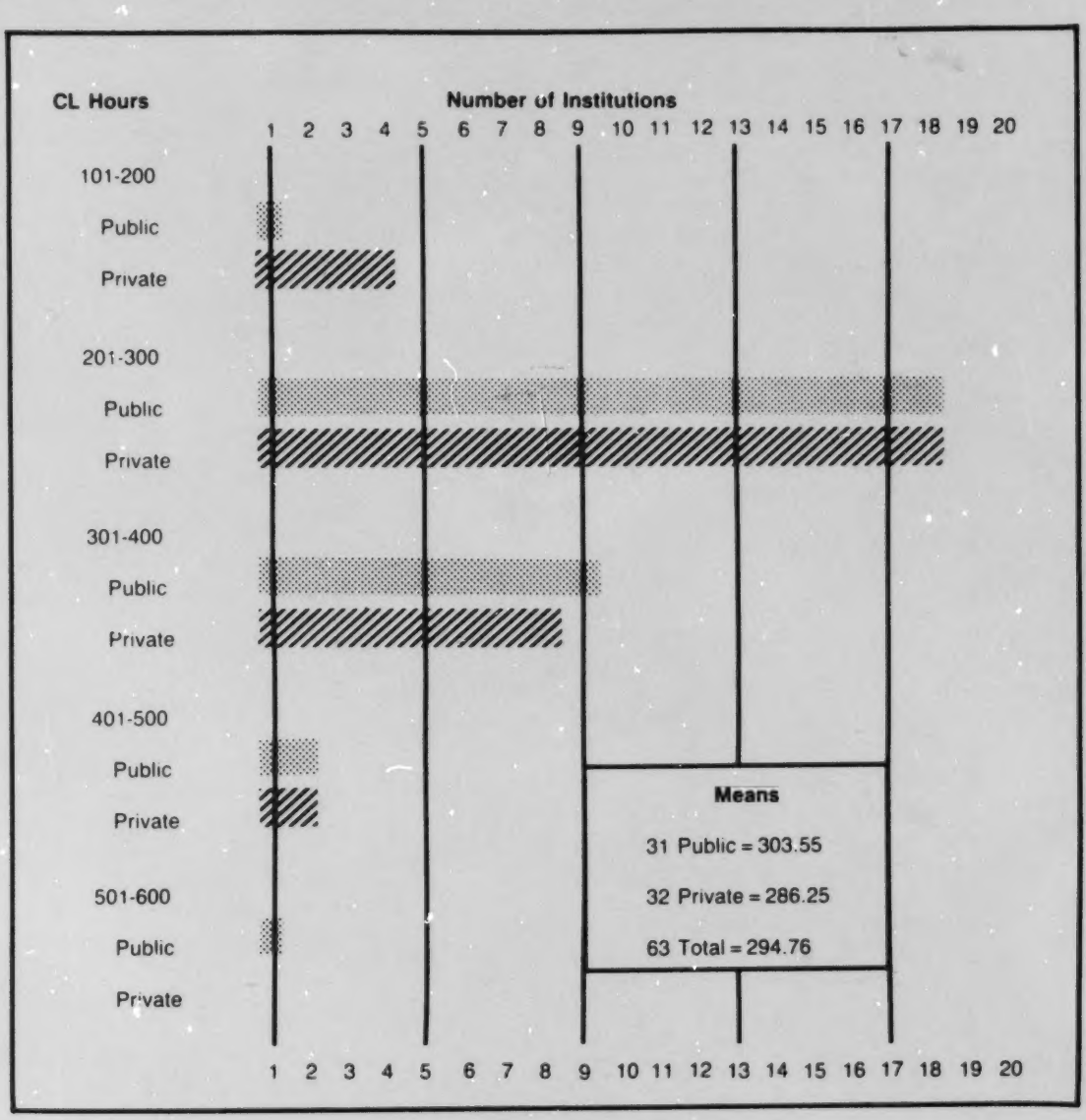
Classroom hours devoted to student teaching are generally greater than required by Agency standards. Teacher education institutions must provide each student sufficient time in an elementary or secondary teaching situation to develop the competencies of a professional. At least eight weeks of student teaching on a full-day basis or 16 weeks on a half-day basis, is required. Most institutions exceed the 240 hour minimum. The mean number of hours reported by 31 public institutions is 303.6, while the 32 private institutions reported a mean of 286.3 hours (Figure C).

Competency Testing

The implementation of TEC 13.032(e) (S.B. 50) may affect teacher supply, although there was no clear consensus among respondents. Thirty-five respondents perceive that enrollment will decline because of competency testing. Two major public universities expect an increase in enrollment because of S.B. 50. Twenty-two respondents believe that a change in programs will be required, and 21 indicated no expected impact on enrollment from the new legislation.

FIGURE C

Student Teaching Requirements
Classroom Hours Required by Public and Private Institutions



PLACEMENT VARIABLES

The study attempted to identify trends in inquiries from school districts for teacher candidates having specific credentials or backgrounds. Respondents were requested to identify, for each of several categories, an increasing or decreasing number of requests, or identify the absence of requests. The answers resulted in these findings: Ninety-three percent of the respondents indicated an increase in requests for teachers with specific areas of specialization or teaching fields. Eighty-one percent reported an increase in requests for special education teachers; 77 percent an increase in requests for bilingual education teachers; and 71 percent an increase in requests for ESL teachers. There were very few specific requests for teachers having a particular ethnic-minority background, specific GPA achievements, or a master's degree.

SUMMARY

An analysis of the findings for this chapter leads to several observations of interest to decision makers concerned with the supply of teachers for the public schools of Texas. These are as follows:

- Teacher education enrollments are increasing. The largest proportional growth in enrollment is taking place in so-called shortage areas such as mathematics, science, fine arts, bilingual education, vocational education, and ESL. There is little growth in enrollments for the fields of preK-K, English, social studies, and special education. The largest actual growth in numbers is in elementary education.

- Sixty-three institutions reported that in 1982-83 they recommended 10,958 graduates for teacher certification, down four percent from the 11,396 reported for 1981-82.

- There was an increase in the number of deficiency plans being written by institutions during the last three years. The completion rates varied widely. Five large public universities accounted for more than half of the 9,775 deficiency plans written so far in 1983-84.

- Classroom hours devoted to student teaching are generally greater than required by Agency standards. The statewide mean is 295 classroom hours compared to the 240 required.

- There was an upward trend in SAT scores for students entering teacher education in 1983-84, compared to those entering in 1982-83. SAT scores for students entering teacher education in private institutions were generally higher than those entering public universities.

- Competency testing is expected to reduce enrollment in 35 teacher education institutions. Twenty-six institutions did not predict a decline, and two thought the impact of competency testing would increase enrollment. Twenty-two institutions forecast a need to make program changes because of competency testing.

CHAPTER FIVE

PROJECTIONS OF TEACHER DEMAND AND SUPPLY THROUGH 1990-91

INTRODUCTION

Since 1981, the base year for the November 1982 Teacher Availability Report, two major economic and social changes occurred in Texas. The recession that plagued the national economy impacted Texas, and the birth rate rose from 19.1 per one thousand population in 1981 to 19.5 per one thousand population in 1982. The projections made in the 1982 report were based on the assumption that Texas would either avoid the worst of the recession or that it would be of such short duration its effect on employment of teachers would be negligible. Furthermore, it was assumed that the birth rate would not increase. As a result of these unanticipated changes and the availability of two additional years of data, it has become necessary to update the 1982 projections.

Projections are provided for the years covering the period from 1982-83 through 1990-91. These projections illustrate the discrepancies between teacher demand and supply predicted to occur if prevailing conditions and trends continue. As with the first set of projections, the data can be used as a basis for making informed judgments regarding the efficacy of the present system for producing and certifying teachers.

The year 1982-83 was itself characterized by a discrepancy between demand for teachers and the supply of qualified teachers. There were both authorized teaching positions local school officials were unable to fill and positions filled with individuals who were not fully certified and/or endorsed. Both conditions indicate a shortfall in the supply available to fill the demand for fully-qualified teachers in 1982-83. In 1982-83 a total of 4,330 emergency teaching permits were issued by the Texas Education Agency. As reported by the Division of Teacher Certification, a total of 277 permits were issued to kindergarten teachers, 786 to elementary teachers, 907 to secondary teachers, 648 to special education teachers, 1,086 to vocational education teachers and 612 to bilingual education teachers. In addition, an unknown number of Temporary Classroom Assignment Permits (TCAPs) were used by school districts. An unknown number of positions were also left vacant. Because of a lack of complete information regarding the total number of permits used and vacancies left open during this base year, it was not possible to separate the impact of current conditions from the projections, other than accepting their existence and carrying them forward as status quo.

The information provided in this chapter is in five parts: (1) a discussion of the major assumptions upon which the projections are based, (2) a discussion of the general methodology used in making the teacher demand and supply projections, (3) a discussion of enrollment growth, historical statewide staffing patterns, and projected statewide employment for preK-K, elementary, secondary, and special education teachers, (4) a discussion of projected supply of pre-K, elementary, secondary, and special education teachers, and (5) a summary of major findings.

NOTE TO OUR READERS: The following paragraphs include a technical discussion of the projection model used in this report as well as a discussion of the results. The key sections are set in boldface type. All remaining sections may be skipped by those readers not interested in technical considerations.

BASIC ASSUMPTIONS

Complete and reliable information on the many social and economic factors which can affect supply/demand projections is not available. Therefore, assumptions must be made. Since the validity and reliability of projections depends upon the assumptions made, it is important that results of the projections be interpreted in light of those assumptions. The projections presented in this report are based on several key assumptions which can be broken into two categories: those underlying demand and those underlying supply.

Projected demand for teachers is based on the following set of assumptions:

- Demand for teachers is driven by student enrollment, teacher attrition, and curriculum changes.
- The present laws and regulations governing mandatory school attendance and curriculum offerings will not be greatly altered by 1990-91.
- Chapter I and other current federal programs will continue to be supported by federal, state, or local funds at the 1982-83 level.
- The birth rate in 1983 and 1984 will be 19.3 per one thousand population.
- The total population of Texas in 1983 and 1984 will reach 15,570,500 and 15,962,400, respectively.*
- Age six enrollment in public schools is a linear extension of the number of births six years earlier and inmigration.
- Age five enrollment will remain at 90 percent of age six enrollment for the remainder of the decade.
- Ages four and under enrollment will continue to decline by 3.7 percent for the remainder of the decade.
- Net in-migration of age cohorts six to 14 will gradually decline over the rest of the decade.**
- The 1982-83 distribution of age cohorts by grade level will remain stable for the remainder of the decade.
- The student drop-out rate will remain stable for the remainder of the decade.
- The proportion of elementary bilingual teachers required to serve limited English proficient students will remain the same.
- The number of special education students can be expected to remain at 11.01 percent of the total enrollment for the remainder of the decade.
- The average ratio of private school to public school enrollment will closely approximate the 1982-83 level for the remainder of the decade.
- The average ratio of fully-certified teachers employed by private educational institutions to fully-certified teachers employed by public educational institutions will closely approximate the 1982- 83 level for the remainder of the decade.
- The average pupil/teacher ratios (for preK-K, elementary, secondary, and special education) and the secondary staffing pattern observed for the last five years will be maintained for the remainder of the decade.
- The conditions giving rise to teacher attrition during 1980 and 1981 have been only temporarily ameliorated by the economic recession.

*Based on population projections provided by the Bureau of Business Research, University of Texas at Austin.

**Between 1978-79 and 1982-83 the rate of net in-migration for these age cohorts fell from an average 1.4 to 1.1 percent. According to the Bureau of Business Research, University of Texas at Austin, total net in-migration can be expected to fall from 253,600 total net in 1982 to 214,800 in 1990.

Projected supply of teachers is based on the following set of assumptions:

- Supply of teachers consists of four major components: teachers currently employed by local districts, new teachers (those awarded initial certificates in a given year), in-migrating teachers (those receiving a one-year certificate from the Division of Certification), and persons with certificates who are not presently teaching.
- The present laws and regulations governing the education and certification of teachers will not be altered greatly by 1990-91.
- Salaries and benefits for teachers will remain at current levels relative to inflation.
- The average number of new and in-migrating teachers observed for the last five years can be expected to remain stable for the rest of the decade.
- The average ratio of fully-qualified teachers leaving the profession to those returning, observed for the last five years, can be expected to remain stable for the rest of the decade.
- All teachers issued a certificate between 1982-83 and 1990-91 will elect to teach by the 1990-91 school year.
- All-level and itinerant teachers are divided equally among preK-K, elementary, and secondary levels.

Many of these assumptions are necessitated by either a lack of available data or by the decision tc build a model which accepts the status quo and projects it forward. The extent to which any deviation from the assumptions seriously affects the projections depends upon the degree of deviation and the particular assumption affected. However, even given that change may occur and thereby alter assumed conditions, these projections provide a useful guide for evaluating future courses of action.

GENERAL METHODOLOGY

Openings in the teaching profession result primarily from increases in student enrollment, changes in instructional programs, and the need to replace personnel who die, retire, or otherwise leave the profession. The impact of expanded curriculum requirements upon teacher demand (e.g., TEC 21.101) was not incorporated into the projections since both the requirements and the timeline for implementation are still not fully known. However, based on information received from the sample of 200 districts, it does not appear that the statewide demand for teachers will be greatly affected by the requirements of TEC 21.101. Projected changes in student enrollment were made using an enrollment projection model developed by the Texas Education Agency Division of Information Analysis. This model projects by grade level both original entries and refined ADA as detailed in the *Superintendent's Annual Report (SAR).*

Enrollment in public schools is not the same as the total population for the appropriate age groups, since some students attend private schools and others do not attend school. In general, Texas public school enrollment varies between 95 and 96 percent of the school age population. Using historic time series data, Texas public school enrollment for 1990-91 is projected to range between 3,618,500 to 3,680,700 original entries, depending upon the assumed rate of net in-migration. This estimate is reasonably consistent with various population projections for 1990. The Texas Department of Water Resources, the Texas Department of Health, and the Bureau of Business Research, University of Texas at Austin have all projected over four million five to 19-year-olds for 1990 (i.e., 4,148,778, 6,232,233 and 4,049,500, respectively).

Projected employment in any given school year is defined as the total number of teachers needed to maintain the current pupil/teacher ratio. This includes part-time as well as full-time personnel.* Projected employment in any given teaching field is defined as the total number of teachers needed to maintain the current staffing pattern for secondary teaching fields. Employment changes as a func-

*It should be noted that this means that demand for teachers is in terms of personnel and not "Full-Time Equivalents" (FTEs), the normal unit of analysis used by the Texas Education Agency.

tion of growth or decline in enrollments, changes in school staffing patterns, or changes in curriculum requirements. As enrollment increases, employment of teachers increases commensurately if other factors such as curriculum and staffing patterns are held constant.

Teacher employment is expressed in terms of certification categories; projections are made for corresponding segments of the student population: preK-K, elementary, secondary and special education. In making secondary school projections, employment is distributed by teaching field on the basis of calculations made from data derived from the Texas Education Agency Roster of Personnel for the years 1979-80 to 1982-83. Using these data, employment estimates are calculated for average annual openings through 1990-91. In order to account for the total teaching force, "all-level" and "itinerant" teachers are divided equally among preK-K, elementary, and secondary teachers. Although the majority of all-level teachers are actually teaching in the lower grades, the split between elementary and secondary (at grades 6 and 7) mandates dividing them between the two levels. The number of all-level and itinerant teachers is small relative to the total and thus does not affect estimates to any great extent.

Because of the volatile nature of student enrollment, two sets of student projections have been prepared. The first is based on the assumption that the average net in-migration observed for the age cohorts six to 14 will decrease to zero by 1989-90. Although this assumption does not seem likely, it provides a lower boundary for teacher demand. The second set is based on the assumption that the average net in-migration for the same age cohorts will decline from an average of 1.1 percent in 1982-83 to .6 percent in 1990-91. This represents a decline of .1 percent per year and is roughly in line with the decline envisioned by the Bureau of Business Research at the University of Texas. This set of student projections provides the upper boundary for teacher demand (see Tables 18 and 19).

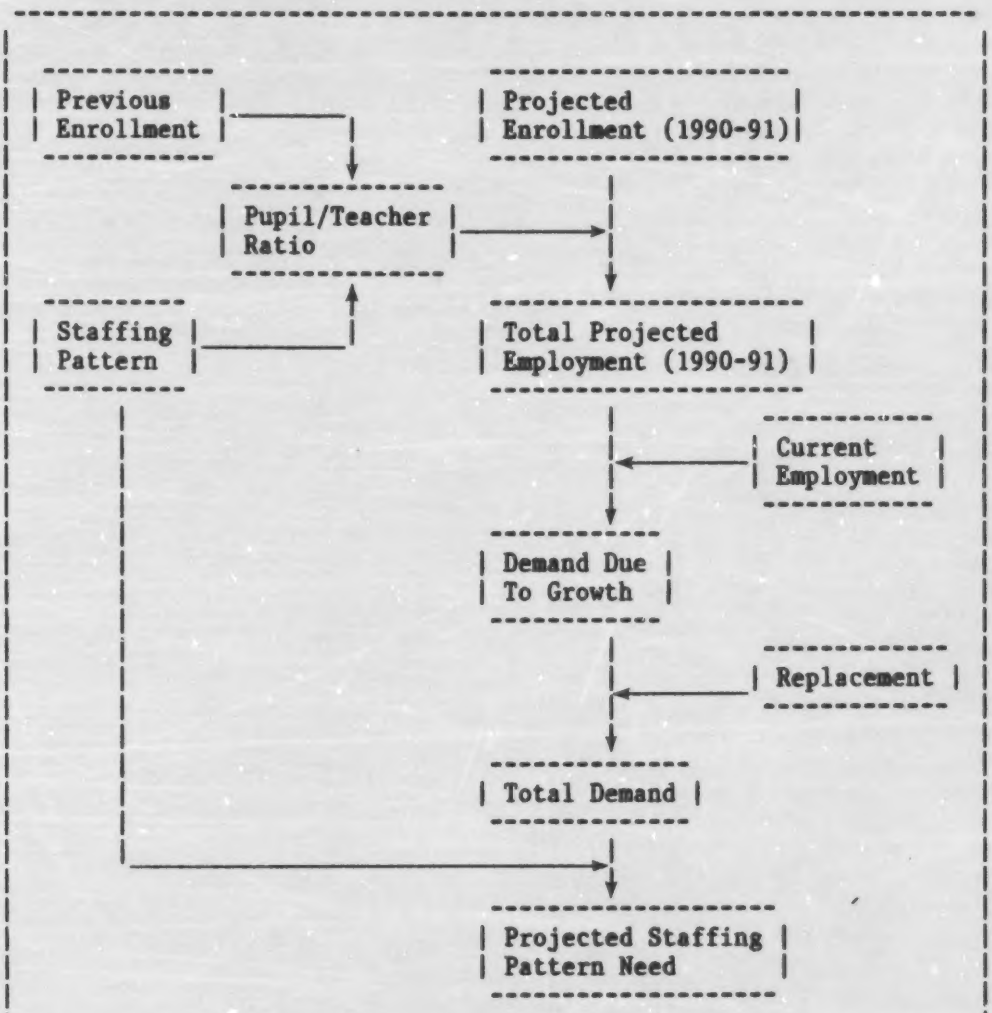
Supply of teachers, the other side of the equation, consists of the total number of fully-qualified teachers (i.e., those who possess appropriate certification and endorsements) available in any of the respective teaching fields. Supply consists of four elements:

- Those qualified teachers currently employed,
- Certified teachers in the state not currently employed in teaching,
- Individuals being issued initial certificates, and
- Certified teachers in-migrating to Texas from other states.

Teacher supply estimates are based on a time-series analysis of new and one- year certificates. While average annual supply calculated by this method does not include those who may return to the teaching profession after several years, it provides a conservative estimate of the supply of new teachers. Average annual teacher surplus or shortage is determined by calculating the difference between demand and supply. A range is calculated for each certification area and teaching field by comparing supply to both sets of demand projections.

Due to the less than absolute nature of projections, projected enrollments have been rounded to the nearest 100 and teacher demand and supply projections to the nearest 10. The methodology for teacher demand projections is summarized in Figure D.

FIGURE D: Teacher Demand Projection Model



PROJECTED DEMAND FOR TEACHERS

In order to project demand for public school teachers for the remainder of the decade, it was first necessary to project enrollment. This was accomplished by using the enrollment projection model developed by the Division of Information Analysis. This model makes use of a modified age progression technique in which the growth or decline in age cohorts is traced from one year to the next. An age progression ratio (i.e., the ratio of the number students in a given age cohort in a given year to the number of students in the succeeding age cohort one year later) was calculated for each age cohort six to 19 for each year between 1978-79 and 1982-83. The age progression ratios were then averaged and used to project the number of students enrolled at a given grade level for a given year.

For the last five years there has been a relatively stable rate of growth across age cohorts six to 14. Assuming a stable student failure rate as well as a stable rate of student transfers between private and public school, this growth can be seen as reflecting net in-migration. In line with the decline in overall net in-migration projected by the Bureau of Business Research at the University of Texas, the age progression ratios were decremented for each year being projected to reflect this decline.* Two different decrements were chosen and applied to the age progression ratios in order to obtain a range for the enrollment projections. The first (.32 percent) was chosen to provide a lower boundary for enrollment projections and the second (.1 percent) was chosen to provide the upper boundary.

Since the age progression technique follows individual age cohorts through time, it was necessary to develop an independent projection of age six enrollment—the entry point into the model. A regression analysis of age six enrollment over the past 10 years was used to project future enrollment of this age cohort. In particular, the projections of age six enrollment were considered in light of the number of births six years earlier, unusual increases in enrollment (to account for non-linear increases in migration), and time. Since projections were being made through school year 1990-91, it was necessary to estimate the number of births for 1983 and 1984. Based upon actual numbers of births for past years, a birth rate of 19.3 per 1,000 population was used.

For the last five years the age five enrollment for any given year has remained at 90 percent of the age six enrollment for the next year. Therefore, the age five enrollment for a given year was derived by applying this percent to the age six projection for the following year. For the last five years, the age four and under enrollment has declined by an average 3.7 percent. Therefore, this rate of decline was applied to the age four and under enrollment to obtain the totals used in the projections. The enrollment for students under six years was projected by summing projections for age five enrollment and the age four and under enrollment. Since the less than age six enrollment is simply added to the totals after all other age cohorts are projected, it does not contribute greatly to enrollment totals. On the other hand, the age six projections are of vital importance since they represent the largest single group of students to be projected forward by the model.

The final step was to translate the age-based enrollment projections into grade-based enrollment projections. This was accomplished by calculating for 1982-83 the percentage of each age cohort found in grades preK-K through 12. The resulting percentages form an age-to-grade conversion matrix that was applied to each of the projection years. School year 1982-83 was used as a baseline year because investigation of previous years had shown that the age-by-grade matrix had remained relatively stable.

Table 17 presents the historical enrollment figures used in the model. Although there has been an overall growth in student enrollment since 1978-79, the pattern of enrollment change by grade levels has been more complex. Not only have preK-K, elementary, and secondary grades experienced both growth and decline in enrollments, there have also been tremendous shifts in the magnitude of the change from one year to the next. However, by comparing preK-K and elementary enrollment in 1978-79 to their respective totals for the present, it can be seen that enrollment has increased overall (10.9 percent for preK-K and 6.6 percent for elementary). Although secondary enrollment has experienced a decline of .9 percent since 1978-79 when

*This projected decline receives further support by noting that for the last five years the average growth rate of age cohorts six to fourteen has declined .3 percent (down from an average growth of 1.4 percent to 1.1 percent).

compared to 1982-83, for the last two years enrollment at this level has increased. It is interesting to note that the historical data highlight the volatile nature of change in student enrollment. The overall enrollment grew by 3,576 between 1978-79 and 1979-80 and by 30,266 in the following year, a tenfold increase in growth.

Table 17: Student Enrollment by Year and Grade Level

School Year	Grade Level			Total
	PreK-K	Elementary	Secondary	
1978-79	215,211	1,416,636	1,376,787	3,008,634
1979-80	214,819	1,440,622	1,356,769	3,012,210
1980-81	225,896	1,472,407	1,344,173	3,042,476
1981-82	227,935	1,510,843	1,351,010	3,089,788
1982-83	238,617	1,510,059	1,364,156	3,112,832

SOURCE: *Superintendent's Annual Report,* Texas Education Agency

Tables 18 and 19 present the enrollment projections generated by varying the assumption made regarding net in-migration. Table 18 contains expected enrollment given that net in-migration drops to zero by 1989-90. Table 19 contains the figures expected, given continued net in-migration for the remainder of the decade. Regardless of the assumption made, both project that growth in total enrollment will continue for the rest of the decade. For Table 18, this growth averages 2 percent per year; while for Table 19, an average growth of 2.3 percent is projected.

Because of the structure of the projection model, the two separate assumptions regarding net in-migration have their greatest impact on the projected enrollment in 1990-91. A comparison of the projections for that year demonstrates that net in-migration can be expected to have virtually no impact on preK-K enrollment. However, elementary enrollment will vary between 1,884,600 and 1,915,100 and secondary enrollment will range from 1,419,500 to 1,451,100. Finally, depending upon the magnitude of the net in-migration, secondary enrollment will either begin to decline in 1987-88 and continue dropping until the 1990-91 school year or simply experience a temporary drop in 1988-89 and 1989-90, followed by a slight rise. Elementary enrollment can be expected to grow regardless of the particular assumption made about net in-migration.

Table 18: Projected Student Enrollment by Year and Grade Level (Net In-migration Drops to Zero)

School Year	Grade Level			Total
	PreK-K	Elementary	Secondary	
1983-84	239,300	1,511,700	1,396,800	3,147,800
1984-85	255,800	1,525,700	1,426,300	3,207,800
1985-86	272,200	1,560,200	1,446,800	3,279,200
1986-87	282,800	1,613,300	1,455,500	3,351,600
1987-88	295,600	1,672,500	1,452,700	3,420,800
1988-89	300,400	1,744,000	1,436,100	3,480,500
1989-90	307,800	1,812,000	1,421,000	3,540,800
1990-91	314,400	1,884,600	1,419,500	3,618,500

SOURCE: *Superintendent's Annual Report,* Texas Education Agency

Table 19: Projected Student Enrollment by Year and Grade Level (Net In-migration Remains Above Zero)

School Year	Grade Level			Total
	PreK-K	Elementary	Secondary	
1983-84	239,300	1,511,700	1,396,800	3,147,800
1984-85	255,800	1,524,500	1,425,600	3,205,900
1985-86	272,200	1,560,700	1,446,700	3,279,600
1986-87	282,800	1,618,300	1,457,800	3,358,900
1987-88	295,600	1,684,300	1,459,700	3,439,600
1988-89	300,400	1,764,300	1,450,200	3,514,900
1989-90	307,800	1,838,900	1,443,600	3,590,300
1990-91	314,400	1,915,100	1,451,100	3,680,600

SOURCE: *Superintendent's Annual Report,* Texas Education Agency

It is important to recognize that in comparison to the enrollment projections made in the November 1982 Teacher Availability Report, elementary enrollment will comprise a greater proportion of the total enrollment than first envisioned. Conversely, secondary enrollment will comprise a smaller proportion of the total because of the unexpected increase in both the actual birth rate in 1982 and the projected birth rate for the remainder of the decade. This shift in proportion of total enrollment will affect the demand for teachers, creating a relatively greater need than first projected for elementary teachers.

Table 20 contains the projected enrollment for special education students. The number of special education students was projected by calculating an average over the last five years of the percentage of original entries identified as handicapped in the *Superintendent's Annual Report* and multiplying this average by total projected enrollment. A low and high estimate was generated for each of the projected years by multiplying the average percentage of handicapped by each of the two enrollment projections. The percentage of total original entries identified as handicapped has remained relatively stable since 1977-78.* This percentage has not varied by more than .58 percent across the six year period. Enrollment of handicapped students is projected to increase continuously for the remainder of this decade. The growth expected will vary between an average of 1.7 to 1.9 percent per year. By 1990-91, there will be between 398,400 and 405,200 handicapped students enrolled in Texas public schools.

In order to derive the total number of teachers needed in 1990-91, it was necessary to estimate the pupil/teacher ratios expected in 1990-91 for preK-K, elementary, secondary, and special education. These estimates were derived by averaging the pupil/teacher ratios observed for these levels for the last five years (Table 21).

*This percentage represents students and not handicapping conditions and is, therefore, an unduplicated count.

Table 20: Projected Enrollment of Special Education Students by Year (1)

School Year	Actual Enrollment (2)	Percent of Original Entries	Projected Enrollment (3)	
			Low	High
1977-78	336,934	11.24	—	—
1978-79	322,737	10.73	—	—
1979-80	322,265	10.70	—	—
1980-81	337,245	11.08	—	—
1981-82	340,727	11.03	—	—
1982-83	351,257	11.28	—	—
1983-84	—	11.01	346,600	346,600
1984-85	—	11.01	353,200	353,000
1985-86	—	11.01	361,000	361,100
1986-87	—	11.01	369,000	369,800
1987-88	—	11.01	376,600	378,700
1988-89	—	11.01	383,200	387,000
1989-90	—	11.01	389,800	395,300
1990-91	—	11.01	398,400	405,200

1. Projected enrollment figures have been rounded to the nearest hundred.
2. Historical data was derived from the *Superintendent's Annual Report,* Texas Education Agency.
3. The column headings "Low" and "High" refer to the two sets of enrollment projections presented in Tables 18 and 19. The low column represents the projected number of special education students, given the assumption that net in-migration will drop to zero, while the high column represents the projected number, given the assumption that net in-migration will remain above zero.

Table 21: Historical Pupil/Teacher Ratios (1)

School Year	Enrollment Category	Original Entries	No. of Teachers (2)	Pupil/Teacher Ratio
1978-79	PreK-K	215,211	6,251	34.43
	Elementary	1,416,636	65,718	21.56
	Secondary	1,376,787	75,002	18.36
	Special Ed.	322,737	15,502	20.82
1979-80	PreK-K	214,819	7,242	29.66
	Elementary	1,440,622	66,800	21.57
	Secondary	1,356,769	74,707	18.16
	Special Ed.	322,265	16,519	19.51
1980-81	PreK-K	225,896	7,532	29.99
	Elementary	1,472,407	67,934	21.67
	Secondary	1,344,173	75,231	17.87
	Special Ed.	337,245	17,350	19.44
1981-82	PreK-K	227,935	7,695	29.62
	Elementary	1,510,843	68,568	22.03
	Secondary	1,351,010	75,862	17.81
	Special Ed.	340,727	17,681	19.27
1982-83	PreK-K	238,617	7,922	30.12
	Elementary	1,510,059	69,023	21.88
	Secondary	1,364,156	76,854	17.75
	Special Ed.	351,257	18,000	19.51

1. The historical data for number of teachers and pupil/teacher ratios differs from that reported in the November 1982 projections due to the elimination of duplicate records.
2. Number of teachers represent individuals, not FTEs. All-level and itinerant teachers are divided among preK-K, elementary, and secondary teachers.

SOURCE: *Superintendent's Annual Report,* Texas Education Agency

The average pupil/teacher ratios were applied to enrollment projections for preK-K, elementary, secondary, and special education students to obtain the total number of teachers needed in 1990-91 (i.e., projected employment). An examination of Table 22 shows that a total of 196,510 to 200,000 teachers will be needed in 1990-91 to maintain current pupil/teacher ratios. Depending upon assumptions, this is either a 16 or 18 percent increase over 1982-83.

Table 22: Projected Number of Teachers Needed in 1990-91 (1)

Teaching Area(2)	Enrollment Projection		Pupil/Teacher Ratio (3)	Projected Employment	
	Low	High		Low	High
PreK-K	314,400	314,400	30.76	10,220	10,220
Elementary	1,884,600	1,915,100	21.74	86,790	88,190
Secondary	1,419,500	1,451,100	17.99	79,210	80,960
Special Ed.	398,400	405,200	19.71	20,290	20,630
TOTAL(4)	3,618,500	3,680,600	—	196,510	200,000

1. Projected employment represents the size of the total teacher work force in 1990-91, assuming that all positions have been filled.
2. An additional 100 elementary, 300 secondary, and 70 special education teachers have been added to the appropriate projected employment totals to account for projected demand in the Windham School district.
3. The pupil/teacher ratios presented here were derived by averaging the appropriate ratios in Table 21.
4. Total enrollment is calculated by summing preK-K, elementary, and secondary figures only. Because projected employment for special education teachers was derived independently of projected employment for other areas, total projected employment is calculated by summing the figures for all four teaching areas.

Because the Windham School District, largest state-supported school system outside the Foundation School Program, does not report original entries to the state, it was necessary to project independently its need for teachers in 1990-91. Based on a projected enrollment of 11,100 students (ADA), an average pupil/teacher ratio of 16.56, and the current staffing pattern, it was projected that Windham will need 100 elementary, 300 secondary, and 70 special education teachers in 1990-91. These figures were added to projected employment in Table 22.

Once employment was projected for 1990-91, the number of job openings due to growth was derived by subtracting the number of teachers presently employed from the projected number of teachers to be employed in 1990-91 for each of the four teaching areas (Table 23). By 1990-91, the number of preK-K teachers needed to maintain the current preK-K pupil/teacher ratio will increase by 2,300, a 29 percent growth for the decade. The elementary teaching force will need to grow by 17,770 to 19,170 additional teachers, or 26 to 28 percent. Secondary teachers will need to increase by 2,360 to 4,110, a three to five percent growth, and special education teachers must increase by 2,290 to 2,630, or 13 to 15 percent. Approximately five to eight times more elementary than secondary teachers and eight to nine times more elementary teachers than preK-K teachers will be needed. This is a significant change over the November 1982 Teacher Availability Report. At that time, it was expected that the demand for elementary teachers would be twice that of secondary teachers. This increased difference in demand for elementary as compared to secondary teachers is due to both an unexpected increase in the 1982 birth rate and an overall decrease in net in-migration. Furthermore, it should be noted that even with an overall projected lower growth rate for student enrollment (due to the expected decrease in net in-migration), demand for elementary teachers can be expected to remain at or slightly above the level projected in the November 1982 Report. Demand for secondary teachers, however, can be expected to be much lower than first projected.

Table 23: Employment in 1982-83, Projected Employment for 1990-91, and Number of Openings Due to Growth by Teaching Area

Teaching Area	Actual Employment 1982-83	Projected Employment 1990-91		Total Openings Due to Growth	
		Low	High	Low	High
PreK-K	7,922	10,220	10,220	2,300	2,300
Elementary	69,023	86,790	88,190	17,770	19,170
Secondary	76,854	79,210	80,960	2,360	4,110
Special Ed.	18,000	20,290	20,630	2,290	2,630
TOTAL	171,799	196,510	200,000	24,720	28,210

Although the procedure used to calculate projected employment for secondary teaching fields parallels that used for preK-K, elementary, secondary, and special education, the steps followed differ in detail. Because of insufficient data, it was not possible to project the number of students who would be taking mathematics, science, English, or any of the other secondary subjects. Therefore, it was not possible to calculate pupil/teacher ratios by teaching field to derive projected employment. Instead, the average percentage breakdown of secondary teachers by major assignment was calculated over the last four years, then multiplied by projected employment for secondary teachers. Table 24 presents the staffing pattern for each teaching field by year. The secondary staffing pattern has remained relatively stable for the last four years. Only fine arts, health/physical education, and bilingual education show a consistent shift relative to other teaching fields. All three show a consistent growth in the proportion of the teaching force.

The total projected 1990-91 employment for each teaching field was calculated by obtaining an average percentage for each teaching field found in Table 24 and multiplying this average by projected employment for secondary teachers and elementary teachers for bilingual education. The number of openings was calculated by subtracting 1982-83 employment from projected employment for 1990-91. As can be seen in Table 25, the number of projected openings due to growth is not large. Only bilingual education is expected to grow by more than seven percent.

Table 24: Statewide Staffing Pattern for Secondary Subject Areas and Elementary Bilingual Education

Teaching Field	Percent of Teaching Staff (1979-80)	Percent of Teaching Staff (1980-81)	Percent of Teaching Staff (1981-82)	Percent of Teaching Staff (1982-83)
Voc Ed.	14.05	14.16	14.02	13.80
English	20.05	20.31	20.21	20.11
Math	13.09	13.06	13.01	13.09
Science	10.61	10.57	10.59	10.61
Social St	12.68	12.62	12.56	12.67
Languages	2.49	2.44	2.51	2.53
Fine Arts	7.10	7.14	7.16	7.21
Business	3.90	3.78	3.90	3.78
Health/PE	10.98	11.05	11.11	11.17
Bilingual	9.69	9.83	10.25	10.60

SOURCE: *Roster of Personnel,* Texas Education Agency

Table 25: Actual Employment in 1982-83, Projected Employment for 1990-91, and Number of Openings Due to Growth by Field

Teaching Field	Actual Employment 1982-83	Projected Employment 1990-91		Total Openings Due to Growth	
		Low	High	Low	High
Vocational	10,609	10,990	11,230	380	620
English	15,455	15,980	16,330	520	870
Math	10,063	10,350	10,580	290	520
Science	8,152	8,390	8,580	240	430
Social St.	9,738	10,010	10,230	270	490
Languages	1,941	1,970	2,020	30	80
Fine Arts	5,542	5,670	5,790	130	250
Business	2,907	3,040	3,110	130	200
Health/PE	8,584	8,770	8,970	190	390
Bilingual	7,313	8,760	8,900	1,450	1,590

In addition to growth, demand for teachers results from attrition.* Death, retirement, and resignations create openings which must be filled. Therefore, it is necessary to estimate attrition if total openings are to be projected. This was accomplished by calculating for each year between 1979- 80 and 1982-83 the number of teachers still teaching in subsequent years. In order to track the same cohort of teachers from one year to the next, the number of teachers just entering the teaching profession (i.e., those with zero years experience) and the number of out-of-state teachers taking Texas teaching positions (as indicated by the number of one-year certificates issued) were subtracted from the number of teachers employed in a given year and compared to the total number of teachers in the previous year.

Table 26: Historical Statewide Attrition Rates by Teaching Area (1)

Teaching Area	Attrition Rates (2)				Weighted Average
	1979-80	1980-81	1981-82	1982-83	
PreK-K	—	7.46	7.91	5.15	6.18
Elementary	6.91	6.53	6.34	5.00	5.70
Secondary	8.99	7.23	6.81	4.37	5.80
Special Ed.	4.93	6.34	7.59	6.26	6.35
Vocational	4.89	7.04	7.68	3.41	4.89
English	—	5.12	6.72	4.27	4.98
Mathematics	—	6.51	6.37	4.23	5.12
Science	—	8.56	7.67	5.49	6.53
Social St.	—	7.36	7.09	3.93	5.25
Languages	—	10.50	3.93	4.52	5.43
Fine Arts	—	8.21	7.51	5.01	6.14
Business	—	8.93	3.34	6.86	6.40
Health/PE	—	8.24	7.45	5.10	6.19
Bilingual	—	5.47	2.26	2.06	2.70

1. Numbers within the body of the table are percentages.
2. Due to unavailablity of data, attrition could not be calculated in 1979-80 for either preK-K or secondary teaching fields.

The data in Table 26 indicate a significant drop in statewide attrition between 1981-82 and 1982-83 in virtually every teaching area. Only among other (foreign) language teachers and business teachers did attrition rise. The year 1982-83 was the first in four years that secondary attrition fell below elementary attrition. This shift created a larger discrepancy between the demand for elementary teachers as compared to the demand

*It should be noted that attrition and turn-over are not the same. See key definitions on pages 1-3.

for secondary teachers than first envisioned in the November 1982 Teacher Availability Report. In general, attrition has dropped from an average seven percent in 1980-81 and 1981-82 to an average five percent in 1982-83. Information collected from school districts in December 1983 seems to indicate that this trend will continue for the 1983-84 school year. This drop in attrition can probably be accounted for by the deepening of the economic recession between 1981-82 and 1982-83. It has been argued by several economists that worker attrition is very sensitive to economic conditions. When business activity slows, workers are forced to "sit tight" and hold onto their jobs. Job opportunities become scarce, creating an unfavorable climate for career changes or "job switching." In addition, it becomes more difficult to sell homes, thereby limiting the flexibility of workers to move to new locations. Teacher attrition is especially sensitive to these factors. Not only do teachers find job opportunities for themselves sharply reduced in the private sector but so do their spouses. Since one of the major reasons given by districts for losing teachers is spouse relocation, the lack of job opportunities translates directly into reduced relocation of teachers. Add to this the "locking up" of opportunities for teachers themselves, and attrition is likely to drop. However, this does not mean that recessions remove or even significantly alter the social and economic conditions which cause an individual to want to switch jobs. The move is generally just "put off" for a few years "until things improve."

Based on the above argument, it was assumed that the conditions which gave rise to the seven percent statewide attrition rate among teachers in 1980-81 and 1981-82 are still operative, and that the drop in attrition will probably be reversed once the recession has been ameliorated. For this reason, the attrition rates presented in Table 26 are an average of two different weighting procedures. The first is a simple average across the past four years of data. This procedure assumes that the attrition rates observed for earlier years are most indicative of what can be expected for the future. The second involves the use of a weighting technique known as "single exponential smoothing." This procedure assumes that the most recent year is more indicative of future trends than preceding years. By averaging the results of these two procedures, it was possible to obtain a set of attrition rates that project a gradual increase in attrition over the remainder of the decade while maintaining an overall rate lower than that observed in earlier years. The weighted average column in Table 26 contains the results of this procedure.

In order to calculate the total number of openings due to attrition, the average attrition rates in Table 26 were inserted into the following formula (derived from classical labor market research) to obtain the average annual number of openings:

$$AOi = ((Ebi + Eti) / 2) \times (ARi)$$

'AOi' is the average annual number of openings (due to attrition) between base period (b) and target period (t) for teacher category (i);

'Ebi' is the actual employment for the base period (b) for teacher category (i);

'Eti' is the projected employment for the target period (t) for teacher category (i); and

'ARi' is the attrition rate calculated for teacher category (i).

Table 27 presents the results of the above calculations. Average annual number of projected openings was multiplied by eight to obtain the total number for the eight-year period. The total number of openings expected for the rest of the decade was derived by adding openings due to growth to openings due to attrition (Table 28). An examination of Table 27 demonstrates that many more openings will be created by attrition than by growth in enrollment. Depending upon the assumed level of net in-migration, attrition will contribute from two to 16 times more annual openings than growth for the primary teaching areas (i.e., PreK-K, elementary, secondary, and special education) and 10 to 27 times more annual openings for the secondary teaching fields. Because the number of openings due to attrition is tied less to enrollment growth than is projected employment, there is less variance in the estimates of such openings. Regardless of the assumed rate of net in-migation, attrition will be the major factor creating vacancies in teaching positions for the remainder of this decade.

Table 27: Total and Average Annual Openings Due to Growth and Attrition

Teaching Area	Total Openings Due to Growth		Total Openings Due to Attrition		Annual Openings Due to Growth		Annual Openings Due to Attrition	
	Low	High	Low	High	Low	High	Low	High
PreK-K	2,300	2,300	4,480	4,480	290	290	560	560
Elementary	17,770	19,170	35,520	35,840	2,220	2,400	4,440	4,480
Secondary	2,360	4,110	36,240	36,640	290	510	4,530	4,580
Special Ed	2,290	2,630	9,760	9,840	290	330	1,220	1,230
Vocational	380	620	4,240	4,240	50	80	530	530
English	520	870	6,240	6,320	70	110	780	790
Math	290	520	4,160	4,240	40	60	520	530
Science	240	430	4,320	4,400	30	50	540	550
Social St.	270	490	4,160	4,160	30	60	520	520
Languages	30	80	880	880	0	10	110	110
Fine Arts	130	250	2,720	2,800	20	30	340	350
Business	130	200	1,520	1,520	20	30	190	190
Health/PE	190	390	4,320	4,320	20	50	540	540
Bilingual	1,450	1,590	1,760	1,760	180	200	220	220

Table 28 presents the total average annual openings. It is projected that for the remainder of this decade there will be between 6,660 to 6,880 annual openings in elementary teaching fields and between 4,820 to 5,090 annual openings in secondary teaching fields. There will be 850 PreK-K openings a year, and more than 1,500 special education openings a year. Bilingual education is expected to have an average of 400 to 420 openings a year. Of the secondary content areas, English has the largest number of expected annual openings (850 to 900), followed by vocational education (580 to 610). Mathematics, science, social studies, and health and physical education will average between 550 and 600 openings a year. Business and foreign languages will average less than 250 openings a year. Fine arts is expected to average between 360 to 380 openings a year. The number of openings by teaching field is generally consistent with the emphasis placed on the subject. For example, English will have the largest number of openings because more courses in English are required than any other subject.

Table 28: Total Average Annual Openings

Teaching Area	Total Average Annual Openings	
	Low	High
PreK-K	850	850
Elementary	6,660	6,880
Secondary	4,820	5,090
Special Ed.	1,510	1,560
Vocational	580	610
English	850	900
Math	560	590
Science	570	600
Social St.	550	580
Languages	110	120
Fine Arts	360	380
Business	210	220
Health/PE	560	590
Bilingual	400	420

The projected openings presented in Table 28 represent the statewide total but not the totals experienced by individual districts. As was reported in Chapter 3, districts experienced over 20,000 openings for the 1983-84 school year. The average annual number of openings projected by the model ranges from 13,800 to 14,400 for this same year. The difference between this projection and the number reported by the districts (i.e., about 6,000) represents the approximate number of teachers moving between districts. This difference was expected and should not be construed as an inconsistency since the model presented here does not consider the exchange of teachers between districts as relevant to the statewide definition of shortage. Part of the difference is also due to the error introduced by averaging the total number of openings projected for the decade by the number of years remaining in the decade. In actuality, the number of openings will vary by year.

PROJECTED SUPPLY OF TEACHERS

Estimating the supply of certified teachers is more speculative than anticipating the demand for teachers primarily because of the lack of data concerning all aspects of the available workforce. For purposes of this study, the available workforce was seen to be composed of four major elements: teachers presently employed, new teachers, in-migrating teachers, and certified teachers who have taught but who are not currently teaching.

New teachers include persons awarded an initial teaching certificate in the year under consideration plus those who had previously obtained certification but had not accepted a teaching position in Texas. This is the best estimate of the number of graduates of teacher education institutions who are eligible to teach. It is typically larger than the number of teachers with zero years of experience listed on the *Roster of Personnel* for any given year since some of those who are awarded certificates opt not to teach. This number of initial certificates does not include those who receive additional certificates or endorsements during any particular year. In-migrating teachers are those with out-of-state teaching certificates who have moved to Texas and are teaching with a One-Year Certificate. This total represents a conservative estimate of the number of in-migrating teachers in any year, since some out-of-state teachers complete Texas government requirements prior to taking a teaching position and are therefore allowed to teach under a regular certificate, given the fulfillment of all other requirements.

The last component of supply, teachers who have taught for some period but who are not currently teaching, includes those who have left the profession. It does not include those who have retired. Because of present limitations of the Agency data base, the number in this group cannot be determined and thus is not included in the supply projections. It is mentioned in the general formula for calculating supply because these teachers may represent a sizeable number. This group of teachers, however, is implicitly dealt with through the procedure used for calculating statewide attrition. Returning teachers are not subtracted from current teacher cohorts and thus function to reduce the attrition rate by an amount proportionate to their numbers. Indirect evidence indicates that the number of returning teachers is not large and does not affect the calculation of attrition to any great extent.

A time-series analysis of "initial" and "one-year" certificates was conducted yielding a weighted average for the five years between 1978-79 and 1982-83 for each of the teaching fields. These averages are referred to as "average annual new certificates" and "average annual one-year certificates," respectively. When added together, the result is "total average annual supply" (Table 29). As in the calculation of demand, "all level" teachers were distributed among the teaching fields in order to account for all of the certificates issued.

The number of certificates issued was averaged using a single exponential smoothing function because it reflects more accurately the strong downward trend in the number of certificates issued over the last five years. Since the procedure used for calculating weighted averages places greater weight on recent years than on earlier years, the resultant average captures recent developments quite accurately. In addition, by using this technique to project supply, two possible future scenarios are portrayed. It can either be assumed that the decline in certificates has "bottomed out" and that the future number to be issued will continue at the level found in 1982-83 or that the decline can be expected to continue for several years followed by a reversal of this trend. In the case of the second possibility, it must be further assumed that the average of the decline and growth observed for the rest of the decade approximates the level found for 1982-83. Indirect evidence seems to indicate that this second possibility is the most likely.

Table 29: Number of Certificates Issued by Year and Teaching Area (1)

Teaching Area	Initial Certificates/Endorsements					Average Annual New Certificates	One-Year Certificates					Average Annual One-Year Certificates	Total Average Annual Supply
	1978-79	1979-80	1980-81	1981-82	1982-83		1978-79	1979-80	1980-81	1981-82	1982-83		
PreK-K	1652	1609	1413	1239	1151	1170	93	118	185	168	94	100	1270
Elementary	4940	4835	4508	4267	4116	4140	741	839	1213	941	553	620	4760
Secondary	4660	4095	3816	3369	3151	3190	567	605	809	692	412	460	3650
Special Education	945	984	950	905	800	820	132	181	311	246	135	170	990
Vocational Education	638	573	530	409	389	400	31	35	40	46	28	30	430
English	1134	911	851	728	755	750	146	158	196	177	96	110	860
Mathematics	343	292	244	236	329	240	62	73	70	76	52	50	290
Science	610	544	573	512	429	440	50	58	94	69	44	50	490
Social Studies	1125	1015	892	771	776	780	86	110	148	133	87	90	870
Other Languages	285	250	217	197	172	180	54	61	78	36	30	30	210
Fine Arts	355	303	297	274	240	250	38	38	67	50	21	30	280
Business	431	353	326	281	288	290	41	29	33	35	25	30	320
Health/PE	1451	1392	1369	1285	1082	1110	75	85	149	82	41	50	1160
Bilingual	345	325	367	316	302	300	1	3	11	12	5	10	310

(1) Secondary teaching fields are areas of specialization and not separate certificates or endorsements. The sum of individuals by specialization is greater than the total for Secondary due to individuals specializing in more than one field.

PROJECTED SURPLUS AND SHORTAGE OF TEACHERS

To calculate average annual surplus (or shortage) of teachers the following formula was utilized:

Av. Annual Surplus (Shortage) = Av. Annual Supply—Av. Annual Demand

Table 30 shows the average annual surplus (or shortage) of teachers projected through 1990-91 for preK-K, elementary, and secondary levels as well as special education. An estimate is also made for each secondary teaching field. It is important to observe that the number entered for each secondary teaching field in the column "Average Annual Supply" represents the number of teachers who have specialized in the field and not the number of persons receiving certificates. Each person receiving a new teaching certificate may specialize in one or more teaching fields. To the extent that newly certified teachers specialize in two or more fields, the numbers represent duplicated counts. Thus, the total number of certificates issued for all secondary teaching fields is greater than the total number of persons receiving secondary teaching certificates. Accordingly, the number represented as annual average supply for each secondary teaching field is an overestimate. Bilingual education teachers are a subset of the total elementary level. Special education is treated as a separate group and is not included in the totals for preK-K, elementary, or secondary.

An examination of Table 30 indicates that for the rest of this decade Texas schools will experience both surpluses and shortages of qualified teachers, varying by teaching field. A surplus of approximately 50 percent is projected for preK-K teachers, while an annual shortfall of approximately 30 percent for special education teachers. Bilingual education can be expected to have an annual shortfall of approximately 34 percent. At the secondary level, an overall shortfall of approximately 24 to 28 percent can be expected, with shortfalls averaging 50 percent for mathematics, 28 percent for vocational education, 24 percent for fine arts, and 16 percent for science. Secondary teaching fields should collectively experience a shortfall between 1,170 and 1,440 teachers, approximately one-third of the total shortfall, with the greatest annual shortages occurring in mathematics (270 to 300 teachers) and vocational education (150 to 180 teachers). Science and fine arts will experience smaller shortages, while English will roughly "break even." A major surplus is expected in health and physical education, with more modest surpluses in social studies, foreign languages, and business education.

Table 30: Projected Average Annual Teacher Surplus and Shortage (1)

Teaching Area (2)	Average Annual Surplus and Shortage (3)	
	Low	High
PreK-K	420	420
Elementary	-1,900	-2,120
Secondary	-1,170	-1,440
Special Ed.	-520	-570
Vocational	-150	-180
English	10	-40
Mathematics	-270	-300
Science	-80	-110
Social St.	320	290
Languages	100	90
Fine Arts	-80	-100
Business	110	100
Health/PE	600	570
Bilingual	-90	-110

1. **Figures are obtained by subtracting Total Average Annual Openings (Table 28) from Total Average Annual Supply (Table 29).**
2. **Because many individuals acquire multiple fields of specialization, the projected supply for secondary teaching fields is inflated. This causes the figures presented above to underestimate the potential shortage in these fields. See page 48 for a discussion of this issue.**
3. **Figures have been rounded to the nearest 10.**

SUMMARY

Student enrollment in Texas can be expected to increase by 16 to 18 percent over the remainder of the decade, a rate of more than two percent per year. Differential rates of increase are expected for various levels. The greatest rate of increase, nearly 32 percent, should occur at the preK-K level. Moderate increases are expected at the elementary level (25 percent to 27 percent) and for special education (13 percent to 15 percent). The lowest rate of increase is expected at the secondary level (4 percent to 6 percent).

Assuming that teacher/pupil ratios and curriculum requirements remain constant, total number of teaching positions can be expected to increase commensurately with enrollment increases: an overall growth of 14 to 16 percent by the end of the decade, with differential rates for preK-K (29 percent), elementary (26 percent to 28 percent), secondary (3 percent to 5 percent) and special education (13 percent to 15 percent).

Even greater increases in demand for teachers is projected to result from attrition. The overall statewide attrition rate can be expected to average about six percent per year, varying between two and seven percent among particular teaching fields. By comparison, growth will play a relatively minor role in creating demand for all teaching positions except elementary. Even at this level, demand due to attrition will be approximately twice as large as the demand due to growth. At the secondary level, demand due to attrition will be over nine times as great as demand due to growth. Attrition and student enrollment growth will combine to produce approximately 14,000 annual openings for teachers through 1990-91. Eighty- three percent of these openings will occur at elementary and secondary levels.

Supply of qualified teachers projected for Texas for the remainder of the decade does not match projected demand. Estimates of the supply of teachers are based upon numbers of new certificates granted in Texas and numbers of one-year certificates granted to teachers migrating to Texas. Comparison of total projected demand with supply estimates reveals that for an average annual demand of approximately 14,000 there will be available a supply of 10,670 new teachers, 420 of whom represent a surplus for preK-K. This projec-

tion translates into a total annual shortfall of approximately 3,330 elementary, secondary, and special education teachers. It also assumes that all new teachers will take teaching positions, a premise not supported by experience in Texas. It further assumes that the 420 surplus of preK-K teachers will be absorbed by elementary vacancies. To the extent that these two assumptions are found not to stand up, this shortfall will be increased. It should be noted that this projected shortage compares favorably to that found in Chapter 3, assuming a definition of shortage that combines vacancies with the number of less-than-fully-qualified teachers hired for the 1983-84 school year.

Future shortages are likely to become more severe if the present trend in supply of new teachers exhibited in Table 29 continues. Initial certificates have consistently declined for the last five years while one- year certificates have declined for the last two years. The model of supply used in this report assumes a leveling off of this trend at something near existing figures. If this assumption does not hold up, the shortages will be even more severe than predicted in Table 30. On the other hand, data collected from 63 teacher education institutions in Texas (see Chapter Four) indicate a potential reversal of this trend. In the fall semesters of 1982 and 1983, the number of students enrolling in education programs increased. This could translate into an increased number of certificates in two to three years. However, even if the observed trend does reverse itself, the time lag between enrollment and certification will serve to minimize the impact of this change on the projections.

Supply, as treated in this model, does not include teachers operating under Emergency Permits, Special Assignment Permits, and Temporary Classroom Assignment Permits. Supply is conceptualized in terms of fully-certified teachers, and any projected shortages or surpluses must also be viewed in this same way. Therefore, projected shortages are not necessarily absolute shortages. That is, they do not necessarily represent unfilled teaching positions. Since more than half of the districts in Texas already utilize some type of temporary permit to fill some positions with individuals who are not fully qualified, it can be expected that future shortages will be handled in this same manner.

All projections in this report are for the entire state, not for regions or specific districts. Research has shown that surpluses and shortages of teachers are affected dramatically by factors such as geographic isolation, urbanization, growth or decline of the community, local economic conditions, and the proximity of teacher education institutions. Because of these factors, specific districts may experience quite divergent patterns of shortages and surpluses. One particular difference which should be recognized is the way in which attrition rates differ between the state and individual school districts. The formula for calculating attrition for the state does not take into account intrastate migration among districts. If a teacher leaves one district to teach in another, it is not counted as attrition for the state. However, the district which lost the teacher has a position to fill. Therefore, the turnover rate will often be higher for any given district than the attrition rate calculated statewide. This is particularly true for those districts previously identified as having characteristics which impede their ability to attract and retain teachers.

CHAPTER SIX

CONCLUSIONS

The data presented in this report are derived from several sources: Agency files and surveys of teacher education institutions and school districts. Response to the survey was extremely high. Out of the 200 districts sampled, 199 responded; of the 65 teacher education institutions in Texas, 63 responded. This level of response ensures the generalizability of the findings as well as their usefulness.

In order to interpret the data correctly, it is imperative that the source for each chapter be kept in mind. Chapter Three, for example, presents findings derived from a district point of view rather than a statewide perspective. Similarly, the projections presented in Chapter Five do not deal with intrastate movement, for such movement is not relevant to total statewide demand for teachers. It is this difference in perspective, as well as the time-frames involved, that contributes to the slight differences in findings between Chapters Three and Five.

It should also be remembered that the shortages projected in this report are shortages of fully-qualified teachers (i.e, fully-certified with appropriate endorsements and/or semester hours). Of the 20,191 openings reported by districts for the start of the 1983-84 school year, only 760 were left unfilled by the beginning of school. This change occurred in spite of the fact that only 16,437 fully-qualified teachers could be found. The shortfall between the supply of fully-qualified teachers and the demand for those teachers was filled with less-than-fully-qualified individuals. This same situation can be expected in the future. For the most part, even with a projected annual shortage of 3,170 to 3,710 fully-qualified elementary, secondary and special education teachers, districts will still be able to fill vacancies.

Current Teacher Supply/Demand Conclusions:

- Over the last four years there has been a proportionately greater growth in teaching staff statewide than there has been in student enrollment at both the preK-K and secondary levels, especially in bilingual and special education. Bilingual teachers (in FTEs) have increased by over 15 percent while the reported number of bilingual students has increased by only three percent. Part of this increase in bilingual teachers may represent a response by school districts to legislative action taken in 1981 (19 TAC 77.351, Subchapter R). Special education teachers (in FTEs) have increased by over 11 percent while student enrollment has increased by only nine percent. It should be noted that the cost of this increase has been borne almost exclusively by local revenues.

- Since 1979-80 there has been a 16 percent growth in the number of teachers supported by local funds and a 20 percent drop in the number supported by federal funds. The drop in federally supported teachers occurred between 1980-81 and 1981-82. Apparently the threat of reduced federal funds spurred many districts to switch the funding source for many teachers. This switch was especially noticeable in the basic skills. It is interesting to note that for the most part these teachers have not been released, but reassigned, since the overall total number of teachers has remained relatively stable in these fields.

- As was reported in the November 1982 Teacher Availability Report, the number of other language teachers and fine arts teachers has remained small: 1,615 other language and 4,661 fine arts teachers (in FTEs) statewide in 1982-83. In districts of under 500 ADA, there were only 18 other language and 76 fine arts teachers; in each of the ESC Regions VIII, IX, and XIV, there were fewer than 20 other language teachers.

- The average district turnover rate in 1982-83 was 11.5 percent. This represents both attrition (i.e, openings due to death, retirement and teachers quitting the profession) and intrastate movement of teachers between districts. Given that statewide attrition in 1982-83 was five percent, the movement of teachers between districts represents half of the average district turnover.

- Because of growth, attrition, and movement among districts, there were over 20,000 openings in 1983-84. Thirteen percent of these openings were due to enrollment growth while the remaining 87 percent were created largely by turnover.

- Approximately four percent of total teacher openings were left vacant. Another 15 percent were filled with less-than-fully- qualified teachers. Nearly all of the less-than-fully-qualified teachers were teaching on emergency or temporary permits of one kind or another.

- Of the more than 19,000 teachers hired to fill vacancies for the 1983-84 school year, approximately 10 percent were persons returning to the teaching profession. Thirty-six percent of the teachers hired for the 1983-84 school year had no prior teaching experience.

- In regard to the impact of TEC 21.101 (House Bill 246), approximately two-thirds of districts indicated they would need to hire additional staff to meet the recommended requirements. As estimated by superintendents, an additional 2,250 teachers will be needed, 32 percent of whom will be mathematics teachers and 21 percent science teachers.

- In regard to the supply of teachers, a relatively small number of the 65 teacher education institutions is responsible for most teachers within any given field. For example, 53 percent of the education students specializing in science in the fall of 1983 were located in two institutions: Texas A&M University and The University of Texas at Arlington. These two universities also accounted for over 29 percent of the students specializing in other languages. Table 13 shows that in each of the ten teaching fields at least 40 percent of the students are concentrated in five colleges or universities.

- Between the fall of 1982 and the fall of 1983, enrollments of prospective elementary and secondary teachers increased by 14.1 and 18.2 percent, respectively. This increase can be translated into an additional 719 prospective elementary teachers and 982 prospective secondary teachers. Among the secondary fields, all but business education showed a commensurate increase. Mathematics and science exhibited the most dramatic change with over 38 and 40 percent increases, respectively. Only English as a Second Language increased at a higher rate due to a relatively small increase over a very small base (i.e., an increase of 87 compared to a total enrollment of 54 in 1982-83). At least part of the observed increase seems to be due to an increased effort on the part of some teacher education institutions to recruit students. Texas A&M University, for example, has developed an active program to recruit students into the field of secondary mathematics.

- Teacher education institutions have also started to raise academic standards for students. Many have raised grade point average requirments for the selected teaching field.

Future Teacher Supply/Demand Conclusions:

- For the remainder of this decade there will be a steadily increasing gap between demand for fully-qualified teachers and the available supply of such teachers. Demand for teachers will be created by dramatic increases in student enrollment along with a steady attrition of experienced teachers. Unless countermeasures are taken supply will continue to lag behind demand. By the end of the decade school districts will have to either cancel courses or continue to fill them with less-than-fully-qualified teachers.

- Attrition, not enrollment growth, will be the single greatest cause of teacher shortages. This cause will be especially true at the secondary level where attrition is expected to create nine times as many openings for teachers as enroliment growth.

- Districts will experience their greatest shortages among elementary teachers. This projected shortage can be expected to total at least 15,000 teachers but could reach 17,000, or 17 to 19 percent of the total number of elementary teachers projected for 1990-91. At the secondary level this projected shortage will vary between 9,000 and 11,500 teachers or 11 to 14 percent of the total number required in 1990-91. Special education represents the third largest area of expected shortages with over 4,000 additional teachers needed

by the end of the decade. Among the secondary teaching fields, mathematics, vocational education, science, and fine arts are all expected to experience shortages. Mathematics will probably experience a shortage of between 2,100 and 2,400 teachers.

- These projected shortages reflect a change from those reported in the November 1982 Teacher Availability Report. This difference occurred because of an unexpected rise in the birth rate, increasing the need for elementary teachers. Significantly lower attrition rates impacting the need for secondary teachers more than elementary teachers also had an effect.

The current economic slump in Texas has led to reduced attrition at the statewide level and decreased mobility of teachers at the local level. Furthermore, due to a reduced rate of net in-migration, growth in student enrollment did not reach the levels projected in the November 1982 Teacher Availability Report. Together, these factors have had the effect of narrowing the gap between supply and demand as originally projected in the earlier report. It is interesting to note that these two factors, the reduction in attrition and the reduction in net in-migration, have been the result of influences beyond the control of the education community. The factors which are within the purview of the education community, such as teacher competency testing and curriculum revision, have not been implemented long enough for the effect to be measured. These factors will become more important as the decade progresses. In spite of the introduction of competency testing and curriculum revision, current trends still indicate dramatic shortages of fully-qualified teachers by 1990-91.

APPENDICES

Appendix A: Teacher Availability, District Survey. This appendix contains the survey questionnaire used in conducting the telephone survey of 199 districts. Data collected in this survey is reported in Chapter Three.

Appendix B: Questionnaire for Teacher Education Institutions. This appendix contains the questionnaire used in the mail-out survey of the sixty-five teacher education institutions. Data collected in this survey is reported in Chapter Four.

Appendix C: Senate Bill 50, 67th Legislature, Regular Session. This appendix contains a copy of S.B. 50 which mandates the pre-professional skills testing of prospective teachers and the proposed plan for implementing that legislation.

Appendix D: Abstract of State Board of Education Proposed Rules 19 TAC Chapter 75, Curriculum (H.B. 246). This appendix contains a summary of State Board of Education rules proposed in January 1984 for implementing H.B. 246, 67th Legislature, Regular Session. This document was sent as an information item to districts participating in the district survey.

TEXAS EDUCATION AGENCY
Department of Planning and Research
District Survey of Teacher Availability

District Name _____ Co. Dist. No. _____

Interviewer: _____
Respondent: _____
Position: _____

1. Did you have any openings, due to either growth or replacement, for teaching positions for the 1983-84 school year?
   Yes _____ No _____
   If NO, go to Item 7.

2. If YES, how many positions? _____
   In which areas?

PreK-K _____	Secondary _____	
Elementary _____	Fine Arts _____	Math _____
Spec. Ed _____	Business _____	Sci _____
Bilingual _____	Health/PE _____	Engl _____
ESL _____	Fgn. Lgs _____	Voc Ed _____
Coaches _____	Soc. Studies _____	Other _____

3. How many new faculty were hired for this school year? _____
   How many were beginning teahers? _____
   How many had prior teaching experience? _____
   Lived in District? _____ Lived outside district? _____

4. Of the teaching positions you had to fill for this school year, how many were the result of:
   Retirement _____
   Relocation due to spouse relocating _____
   Teachers leaving the profession to take a job in another profession _____
   Death _____
   Teachers leaving to have or raise children _____
   Teachers moving to another district for better pay or benefits _____
   Growth in enrollment _____
   Promotion _____
   Don't know _____
   Other reasons _____

5. As of the first of the school year this year, were any of these positions filled with teachers who were not fully certified and properly endorsed?
   Yes _____ No _____ If NO, go to Item 7.

6. If YES, how many? _____
   In which teaching areas?

PreK-K _____	Secondary _____	
Elementary _____	Fine Arts _____	Math _____
Spec. Ed _____	Business _____	Sci _____
Bilingual _____	Health/PE _____	Engl _____
ESL _____	Fgn. Lgs _____	Voc Ed _____
Coaches _____	Soc. Studies _____	Other _____

7. What method or methods was/were used by your district to cover classes for which you have been unable to hire a fully-certified and/or properly endorsed teacher?
   Cancel course _____
   Increase class sizes of other courses _____
   TCAP existing teacher(s) to teach course _____
   Use an Special Assignment Permit for existing teacher _____
   Use an Emergency Permit for a new teacher _____
   Reassign staff _____
   Fill position on a temporary (or permanent) basis with a substitute _____
   teacher _____
   Coop teacher with another district _____
   Other _____

8. What is an estimate of the district's turn-over rate this past year? _____
   Is this rate higher/lower/about the same as in previous years?

9. At the beginning of this school year did you have a surplus of teachers in any area?
   Yes _____ No _____
   If YES, at which level: Elem _____ Secondary _____

10. What is the total number of teachers teaching on a TCAP in the district at the present date? _____

    Of that number, how many are being used to fill vacancies for which you could not hire a fully-certified and/or properly endorsed teacher? _____

11. What is the total number of teachers on Emergency Permits (excluding one-year certificates) at the present? _____

    How many of these persons are being used to cover classes *for which no teacher could be hired*?
    In which areas?

PreK-K _____	Secondary _____	
Elementary _____	Fine Arts _____	Math _____
Spec. Ed. _____	Business _____	Sci _____
Bilingual _____	Health/PE _____	Engl _____
ESL _____	Fgn. Lgs _____	Voc Ed _____
Coaches _____	Soc. Studies _____	Other _____

12. Approximately how many applications were received by the district for teaching positions for this fall? _____
    In which areas?

PreK-K _____	Secondary _____	
Elementary _____	Fine Arts _____	Math _____
Spec. Ed _____	Business _____	Sci _____
Bilingual _____	Health/PE _____	Engl _____
ESL _____	Fgn. Lgs _____	Voc Ed _____
Coaches _____	Soc. Studies _____	Other _____

    Is the total more/less/about the same number of applications as compared to last year?

13. Did the district reassign administrative personnel to classroom duties to cover classes for which no teacher could be hired?
    Yes _____ No _____

14. Which college(s) are the primary source for beginning teachers in the district?
    _____
    _____
    _____

15. Approximately what percent of the teachers hired this past year were from out of state (held out of state certificates)? _____%

Approximately how many teachers were hired this past year who were *returning* to the teaching profession (from any source)? _____

16. What non-salary fringe benefits are offered to teachers in your district?
_____ pay all or part of health insurance
_____ life insurance or annuity plan
_____ additional sick leave with pay
_____ personal leave days with pay
_____ tuition or continuing ed stipends
_____ differentiated pay for assignment
(e.g., location or subject)
If subject, which:
_____ travel allowance
_____ professional leave with pay
_____ other:

17. Of the following reasons which may have been given by newly-hired teachers for coming to your district, which are the three most frequently given?
spouse relocation _____
higher pay/benefits _____
return to hometown _____
other _____
reputation of district _____
desirability of community _____
unable to find work elsewhere _____

18. True or False: The district encourages teachers to have composite certification, multiple endorsements, or multiple teaching fields.

19. True or False: Given a choice, the district prefers to hire experienced teachers rather than beginning teachers.

20. True or False: Given the choice, the district prefers to hire teachers with a master's degree.

21. Of the following, which do you believe will be the greatest contributor of teaching vacancies in your district in the next two years:
Enrollment increase _____
Retirement of teaching staff _____
Teachers leaving the profession to enter another profession _____
Teachers leaving to teach in another district _____
Relocation of teachers due to spouse relocating _____
Term contract non-renewal _____
Statewide curriculum reform (HB 246) _____
Reassignment of teachers to non-teaching position
Other _____

22. Based on the Commissioner's proposal concerning the HB 246 curriculum revision provided with our introductory letter, do you anticipate a need for hiring additional *certified and properly endorsed teachers in your district* for those subjects required for graduation?
YES _____ NO _____
If YES, how many in the following areas:
math _____ fine arts _____
sci _____ voc.ed
fgn.lgs _____ engl _____
soc.stud _____ business _____
health/PE _____

23. Based on the Commissioner's proposal concerning the HB 246 curriculum revision provided with our introductory letter, it may be necessary for your district to make some adjustments in your elective course offerings in order to provide the additional courses required by the curriculum revision. Which of the following kinds of changes do you anticipate making? (Check as many as applicable.)

_____ Dropping an elective, releasing the teacher and hiring a new teacher to teach the required course.
Estimated number of teachers affected _____

_____ Dropping an elective, reassigning the teacher to the required course.
Estimated number of teachers affected _____

_____ Keeping the elective and hiring an additional teacher for the required course.

_____ Keeping the elective and making schedule or teacher assignment adjustments that require no new staff and do not require the release of existing staff.

_____ Don't know at this time.

TEXAS EDUCATION AGENCY
1983-84 Teacher Availability Study

QUESTIONNAIRE FOR TEACHER EDUCATION INSTITUTIONS

The answers to this questionnaire, along with data being collected from other sources, will be used to update the state estimate of teacher supply and to provide information for the regression model which will be developed to predict teacher availability at the school district level. All of the sixty-five (65) colleges and universities having a teacher education department or college are requested to participate in this survey.

Most questions are designed for numeric or checked multiple choice responses. Subjective estimates or opinions do not need qualifying statements.

It is intended that all institutions will respond to these questions using data files within the college or department of education. The information requested will, in most cases, be available to Placement Officers, Certification Officers and/or Counselors for teacher education.

DEFINITIONS:

Entering Student: A student who has been admitted to or is in the process of being formally admitted to the College or Department of Education.

Graduate: A graduate recommended for provisional teacher certification by the College or Department of Education.

QUESTIONNAIRE

A. **POPULATION VARIABLES** Changes in the population of prospective teachers in college year 1983-84 as compared to 1982-83 unless other years are specified in the question.

1. The average SAT/ACT Scores for entering students in the College or Department of Education were:

	1982-83	1383-84
SAT:		
Verbal	_____	_____
Mathematics	_____	_____
Composite	_____	_____
ACT:		
English	_____	_____
Mathematics	_____	_____
Composite	_____	_____

2. Give the total number of students admitted or in the process of being admitted to the College or Department of Education.

1981-82 Fall	1982-83 Fall	1983-84 Fall
_____	_____	_____

3. The number of graduates reccmmended for provisional teacher certification was:

1981-82 _____ 1982-83 _____

4. Estimate the percent of all students who have been admitted or in the process of being admitted to the College or Department of Education who are from the local area:

_____%

5. Of the education graduates in 1982-83, estimate the percentage in the following three categories:

1) Returned to county of residence _____ %
2) Remained in college town _____ %
3) Other _____ %

6. Give the number of students who have been admitted or are in the process of being admitted to the College or Department of Education, who selected programs in each of the following professional certification categories, endorsement categories, or teaching fields:

Certification	# Enrolled 1982-83 (Fall)	# Enrolled 1983-84 (Fall)
K-PreK	_____	_____
Elementary	_____	_____
Secondary		
English	_____	_____
Mathematics	_____	_____
Science	_____	_____
Fine Arts	_____	_____
Vocational Ed	_____	_____
Social Studies	_____	_____
Foreign Language	_____	_____
Business	_____	_____
Health/PE.	_____	_____
Total Secondary	_____	_____
Special Education	_____	_____
Bilingual Education	_____	_____
E.S.L.	_____	_____
Other	_____	_____

7. Of the entering education students, how many selected two (2) or more of the areas listed in Question 6 above? (Do not count "other" in this answer)

1982-83 _____ (Fall) 1983-84 _____ (Fall)

8. The number of certified teachers enrolling for graduate degree programs, additional endorsements, or additional teaching fields was:

1982-83 _____ (Fall) 1983-84 _____ (Fall)

9. The number of teachers with provisional certificates enrolling for courses to remove deficiencies was:

1982-83 _____ (Fall) 1983-84 _____ (Fall)

B. **INSTITUTION VARIABLES** (Changes that have occurred within college and university programs)

1. The impact of Senate Bill 50 (competency testing) on teacher education is perceived as a factor which will: (check answer)

a. increase enrollment _____
b. decrease enrollment _____
c. not affect enrollment _____
d. create necessary changes in programs _____

2. In general, how many *classroom hours* of student teaching are required? _____

3. Of the students enrolled in the College or Department of Education, please estimate the percent who are *older* than average students.

1982-83 _____% 1983-84 _____%

4. How many college/university deficiency plans were written during the last three years? In your opinion, what percentage of them were completed or will be completed?

	1981-82	1982-83	1983-84
# written	_____	_____	_____
% completed	_____%	_____%	_____% (estimate)

5. What GPA is required to be admitted to teacher education in your institution?

1981-82 _____ 1982-83 _____ 1983-84 _____

6. What institutional GPA is required for graduation from your College or Department of Education?

1981-82 _____ 1982-83 _____ 1983-84 _____

C. **PLACEMENT VARIABLES**

Is there an increasing or decreasing trend in the number of school districts which contact your Placement Office looking for teacher candidates having the following specific credentials or background? (Please check appropriate boxes)

	Increasing Trend	Decreasing Trend	No Inquiry
1. Specific Specializations or Teaching Fields	_____	_____	_____
2. Specific Endorsements	_____	_____	_____
a. Special Education	_____	_____	_____
b. Bilingual Education	_____	_____	_____
c. E.S.L.	_____	_____	_____
d. Kindergarten	_____	_____	_____
3. Specific GPA Ranges	_____	_____	_____
4. Ethnic Minority Graduates	_____	_____	_____
5. Masters Degree	_____	_____	_____
6. Other (Specify_____)	_____	_____	_____

_____

NOTE: The completed questionnaire should be returned on or before December 16, 1983. You may use the enclosed return envelope or address your reply to:

Office of Planning and Research
Mr. B. F. Peters
Texas Education Agency
201 East 11th Street
Austin, Texas 78701
(512/475-2275)

AN ACT
(AS FINALLY PASSED AND SENT TO THE GOVERNOR)

Relating to the certification of public school teachers, superintendents, or other administrators and to testing requirements as prescribed by the State Board of Education; amending Section 13.032, Texas Education Code, as amended, by amending Subsection (c) and adding Subsections (d), (e), (f), and (g).

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

SECTION 1. Section 13.032, Texas Education Code, as amended, is amended by amending Subsection (c) and adding Subsections (d), (e), (f), and (g) to read as follows:

"(c) In developing standards for programs in teacher education, the board shall provide each approved institution with a statement of the general qualifications required for each area for specialization for which a teaching certificate is authorized. The board may not require an institution to teach a particular doctrine or to conduct instruction on the basis of, or in accordance with, any particular pedagogical method.

"(d) The State Board of Education by rule shall prescribe:

"(1) the classes of teaching certificates to be issued, based on education, experience, competency, duties, or other relevant considerations;

"(2) the time period for which each class of certificate is valid; and

"(3) the requirements for issuance of an initial certificate or renewal of an existing certificate.

"(e) The State Board of Education by rule shall require satisfactory performance on a competency examination of basic skills prescribed by the board as a condition to admission into an approved teacher education program. In addition, the board by rule shall require satisfactory performance after graduation on a comprehensive examination prescribed by the board as a condition to full certification as a teacher and shall require satisfactory performance on a separate examination prescribed by the board as a condition to certification as a superintendent or other administrator. The board shall prescribe the method of determining the satisfactory level of performance on a test under this subsection.

"(f) The State Board of Education may fix and require payment of a fee as a condition to taking an examination required by this section. The fee must be reasonable and designed to cover the costs of the agency relating to administration of the examination.

"(g) A person enrolled in a general academic teaching institution, as defined by Section 61.003(3) of this code, before the effective date of rules adopted under Subsection (e) of this section is entitled to enter an approved teacher education program of that institution or to remain in the program and complete it in accordance with the law and the rules of the board in effect before the adoption of rules under Subsection (e) of this section. A person who before the effective date of rules adopted under Subsection (d) or (e) of this section was issued a teaching certificate, and the rights of that person relating to certification shall be determined in accordance with the law and rules in effect before the adoption of rules under those subsections."

SECTION 2. The importance of this legislation and the crowded condition of the calendars in both houses create an emergency and an imperative public necessity that the constitutional rule requiring bills to be read on three several days in each house be suspended, and this rule is hereby suspended, and that this Act take effect and be in force from and after its passage, and it is so enacted.

SUMMARY

PROPOSED PLAN FOR IMPLEMENTING S.B. 50

I. The State Board of Education reviewed and began adoption of Rule 19 TAC, Section 141.4, *Testing Requirements* at the October 1981 meeting. This adoption will establish the general requirements and set the effective date.

II. The staff of the Texas Education Agency will coordinate the activities necessary to implement the plan enclosed in these materials. The plan and emerging issues will be reviewed by the Select Committee on Public Education and the appropriate Steering Committee of the State Board of Education. S.B. 50 is implementing the recommendation from the Commission on Standards for the Teaching Profession. Further recommendations will proceed from the Commission through the Steering Committee to the State Board. The advisory committees appointed by the State Board to advise on priority educational issues will also be involved.

III. Statute (S.B. 50) requires satisfactory performance on a competency examination of basic skills for admission to teacher education programs.

A. Define basic skills.

1. Determine content to be measured. Specify in objective terms.

2. Present content to SBOE for approval. Disseminate SBOE approved content to teacher education institutions.

3. Study feasibility and adequacy of existing tests. Conduct review of objectives to test content.

4. Recommend adopting existing test for use or new test development.

B. Develop Request for Proposal (RFP) for field testing of existing test or new test development. Include the study of field data to develop cut score.

1. Write RFP. Recommend to SBOE.

2. Conduct development, field testing, and cut-score study.

(a) Item development or test adaption.

(b) Field testing at selected institutions.

(c) Statistical analysis including bias studies and cut-score recommendations.

C. Develop test administration procedures.

D. Develop and present to SBOE through CSTP completed SBOE policies on tests, criteria for pass/fail, and administration procedures.

E. Initiate and implement program for students seeking admission to teacher education programs for Fall 1983.

IV. Statute (S.B. 50) requires satisfactory performance on a comprehensive examination prescribed by the board as a condition to certification as a teacher and a separate examination as a condition to certification as an administrator.

A. Conduct task analysis of teachers and administrators to obtain empirical information on the activities required for competent performance. This must be done to insure that the testing program is job-related.

B. Order the areas of specialization to determine tests to be developed first. Determine in objective terms the skills and knowledge to be measured in each area. Recommend To SBOE.

C. Study feasibility and adequacy of using existing tests.

D. Study feasibility of options concerning the number of tests.

E. Contract through RFP process for the development of tests, if necessary.

F. Complete all test development or adaptation.

G. Establish and pilot test administration procedures through testing centers, (i.e., approved institutions or other designated sites).

H. Develop and present to SBOE through CSTP policies covering tests, pass/fail criteria, administration procedures, etc.

I. Inititate and implement program for graduates seeking Texas certification.

Abstract

State Board of Education Proposed Rules
TAC Chapter 75, Curriculum (H.B. 246)

First Reading and Filing Authorization of January 14, 1984

I. Essential Elements

The essential elements represent those core knowledges, skills, and competencies all students should learn to be effective and productive members of society. They are described for each subject by grade level and/or by course. A school district must provide instruction in the essential elements at the grade levels and in the courses specified. A school district may add elements but is not to delete or omit instruction in the essential elements required by the State Board of Education.

II. Elementary Well-Balanced Curriculum

Attachment 1 sets out proposed time requirements for each subject in Kindergarten through Grade 6.

III. Secondary Well-Balanced Curriculum

A. Grade 6 at the Middle School

If Grade 6 is departmentalized under the middle school organizational structure, a unit will consist of class periods of a minimum of 45 minutes of academically engaged time for 175 days. The units required for each school district to provide and each student to take are:

Subjects	Units
English Language Arts (one unit shall be reading)	2
Mathematics	1
Science	1
Social Studies	1
Physical Education	1/2
Fine Arts	1/2
Health (essential elements shall be taught)	-

If a district wishes to deviate from the requirements, a plan must be submitted and approved by the Commissioner of Education.

B. Secondary Grades 7-8

A unit will consist of class periods of a minimum of 45 minutes of academically engaged time for 175 days. Each school district must teach and each student must take:

Texas Education Agency
January 17, 1984

Subjects	Units
English Language Arts	2
Mathematics	2
Life Science	1
Earth Science	1
Physical Education	1
Texas History/Geography	1
U.S. History/Citizenship	1
Computer Literacy (1)	0 or 1/2
Reading (2)	0, 1, or 2
Electives	sufficient to complete 12 units

1. One-half unit of computer literacy shall be completed during Grade 7 or 8. A district may develop and implement a plan for teaching and assessing mastery of the essential elements of computer literacy in elementary grades. Students who can demonstrate mastery of the essential elements on an assessment instrument obtained from the Commissioner of Education may be exempted from taking the one-half unit course.

2. Students who score two years or more below grade level on a standardized achievement test will be assigned to a one unit reading improvement course in Grade 7 and a one unit reading improvement course in Grade 8. Students who score between one and two years below grade level will be assigned to the reading improvement course at the discretion of the school district based on the need of the student.

C. Secondary Grades 9-12

1. Each school district will offer the courses listed in this section and will maintain evidence that students have the opportunity to take these courses every year or at least every other year.

   a. English Language Arts - English I, II, III, IV, English IV (academic), Correlated Language Arts I, II, III, IV

   b. Mathematics - Fundamentals of Mathematics, Consumer Mathematics, Pre-Algebra, Algebra I, Algebra II, Geometry, and Pre-Calculus (Trigonometry and either Elementary Analysis or Analytic Geometry may be offered in lieu of Pre-Calculus)

   c. Science - Biology I, Chemistry I, Physics I, Physical Science, Introductory Biology.

   d. Social Studies - United States History, World History, United States Government

   e. Economics with emphasis on the Free Enterprise System and its benefits

f. Physical Education I and II

g. Health I

h. Fine Arts - courses selected from two of the three fine arts areas (art, music, theatre arts)

i. Business Education - Typewriting, Accounting or Recordkeeping, Personal Business Management

j. Vocational Education - courses selected from two program areas taught at home school with provisions for contracting for additional offerings

k. Other Language - levels I and II of another language (hardship exemptions may be requested)

l. Computer Science - one course from Computer Mathematics I or II, Business or Vocational Data Processing, Business or Vocational Computer Programming, Computer Science I or II

2. A school district must provide each student the opportunity to participate in all courses listed above. Students must be given the opportunity each year to select courses in which they intend to participate from a list that includes all the courses. For those courses where 10 or more students indicate that they will participate or the course is required for a student to graduate, the district shall teach the course. For those courses where fewer than 10 students indicate that they will participate, school districts will employ options, as may be practicable, to provide the course.

IV. Graduation Requirements

A. High School Diploma Requirements

Students must complete at least 21 units of credit or equivalent earned in Grades 9-12 to receive a high school diploma. The required 21 units must include the following:

1. English - 4 units (substitutions available for English IV)

2. Mathematics - 3 units

3. Science - 2 units

4. Social Studies - 2-1/2 units

a. World History or World Geography - 1 unit

b. United States History - 1 unit

c. United States Government - 1/2 unit

5. Economics, with emphasis on the Free Enterprise System and its benefits - 1/2 unit

6. Physical Education - 1-1/2 units (waiver for athletics with waiver for drill team, cheerleading, marching band, Reserve Officer Training Corps (ROTC), contingent on passing physical fitness test)

7. Health I - 1/2 unit

8. Electives - 7 units (all electives must be taken from the list of State Board of Education approved courses, Grades 9-12)

Students who wish to develop a higher level of competence for successful entry into specific occupations are encouraged to use at least five of their electives to complete five units in the following areas:

1. Occupational Exploration - 1 unit

2. Specific Skill Training - 4 units from one of the following: Agribusiness Education, Health Occupations Education, Marketing and Distributive Education, Office Education, Occupational Home Economics, Trade and Industrial Education, Technical Education

B. Advanced High School Program

Students who wish to complete an advanced high school program and to have such accomplishment recognized and distinguished on the Academic Achievement Record (transcript) must complete requirements in addition to those prescribed in Section A. Programs are of two types: Students who complete the requirements below (items 1-12) will be recognized as completing the advanced high school program. Students who earn credit in five courses, designated as honors by the board of trustees and approved by the State Board of Education, in addition to completing items 1-12, shall be recognized as completing the advanced high school program with honors. Twenty-two units must be completed which include:

1. English - 4 units to include English I, II, III, and IV (academic - 1/2 unit British Literature and 1/2 unit composition)

2. Mathematics - 3 units to include Algebra I, Algebra II, Geometry (If credit is given for any of these courses taken in the seventh and/or eighth grade, the student must complete three units from the following advanced courses: Pre-Calculus [Trigonometry and either Elementary Analysis or Analytic Geometry may be taken in lieu of Pre-Calculus], Computer Mathematics I and II, Probability and Statistics, Calculus, Number Theory, Linear Algebra, Linear Programming, History of Mathematics and Survey of Mathematics.)

3. Science - 3 units to include selected courses from Physical Science, Biology I, Biology II, Chemistry I, Chemistry II, Physics I, Physics II, Geology, Meteorology, Astronomy, Marine Science, Environmental Science, or Laboratory Management

4. Other Language - 2 units of any one language

5. Additional unit of Mathematics, Science, or Language - 1 unit

6. Fine Arts - 1 unit from any approved course

7. Social Studies - 2-1/2 units

   a. World History - 1 unit

   b. United States History - 1 unit

   c. United States Government - 1/2 unit

8. Economics, with emphasis on the Free Enterprise System and its benefits - 1/2 unit

9. Physical Education - 1-1/2 units (waiver for athletics with waiver for drill team, cheerleading, marching band, ROTC, contingent on passing physical fitness test)

10. Health I - 1/2 unit

11. Computer Science - 1 unit from Computer Mathematics I and II, Business or Vocational Data Processing, Business or Vocational Computer Programming, and Computer Science I and II

12. Electives - 2 units (all electives must be taken from the list of State Board of Education approved courses, Grades 9-12)

A school district board may elect to offer honors courses. Descriptions of the courses will be required to have State Board of Education approval before they can be offered for the advanced high school program with honors.

V. Schedule for Implementation

A. Elementary, Kindergarten-Grade 6

1. All provisions concerning the use of instructional time are to be implemented fully beginning with the 1984-85 school year.

2. All provisions regarding essential elements are to be implemented fully beginning with the 1985-86 school year.

B. Secondary, Grades 7-12

1. All provisions regarding courses required to be offered (Section III) and graduation requirements (Section IV) are are to be implemented fully beginning with the 1987-88 school year. Students entering Grade 9 in the 1984-85 school year and thereafter will be required to meet the new graduation requirements.

2. All provisions regarding essential elements are to be implemented fully beginning with the 1987-88 school year.

C. Provisions of other sections of the rules are to be implemented during the 1984-85 school year unless otherwise specified.

D. Each school district will submit a plan for implementation of all requirements of the rules to the Division of School Accreditation before August 31, 1984. This plan must reflect the district's intent and commitment to orderly implementation of all provisions, but a district may implement requirements earlier than the dates specified.

VI. Other Provisions

A. Special Populations/Programs

These materials describe the well-balanced curriculum and the essential elements (knowledges, skills and competencies) that will be a core education for all students. Programs for special populations provide for use of the most appropriate method of instruction for delivery of the essential elements to students with special needs. All students, regardless of special need or condition, will be provided a well-balanced curriculum, but a district must modify the method of instruction, pacing, and/ or materials as may be appropriate. The applicable federal and state laws and rules of the State Board of Education for the programs (Bilingual Education and Other Special Language Programs, Gifted and Talented, Compensatory Education, Special Education, and Migrant Education Programs) are in place and are not in conflict with the well-balanced curriculum and essential elements.

B. Award of Credit, Grades 9-12

1. The award of credit for a course by a school district affirms that a student has satisfactorily met all state and local requirements. Courses offered for a unit of credit in Grades 9-12 will be scheduled for a minimum of 160 clock hours of class instruction (one 55-minute period per day for the 175-day school year). A one-half unit of credit is 80 clock hours.

2. A school district must establish a system of reporting grades and credit earned. Each school district must use a numerical scale of 0-100 and a grade of 70 will be a minimum for a student to pass a course and for credit to be awarded. A student must take two and one-half units of credit each semester enrolled in Grades 9-12.

3. Students must not be absent from any class or course to participate in any activity (extracurricular or other) more than five times during any one year or three times during any one semester in order to be awarded credit for a course. Days missed for University Interscholastic League Competition above the district level shall not count as any of these absences.

4. School district boards of trustees will establish policies on promotion, retention, remediation, and placement of students which reflect an emphasis on mastery of the essential elements.

C. Academic Achievement Record (Transcript)

The Academic Achievement Record adopted by the State Board of Education will be used to record the academic achievement, honors, test data, awards, and other information of the high school student in Grades 9-12. Districts must use the common coding system for courses. Students who complete the advanced high school program will have a state seal attached to the transcript. Students who complete the advanced high school program with honors will have this accomplishment noted with a distinguished seal.

COMPLIANCE STATEMENT

TITLE VI, CIVIL RIGHTS ACT OF 1964; THE MODIFIED COURT ORDER, CIVIL ACTION 5281, FEDERAL DISTRICT COURT, EASTERN DISTRICT OF TEXAS, TYLER DIVISION

Reviews of local education agencies pertaining to compliance with Title VI Civil Rights Act of 1964 and with specific requirements of the Modified Court Order, Civil Action No. 5281, Federal District Court, Eastern District of Texas, Tyler Division are conducted periodically by staff representatives of the Texas Education Agency. These reviews cover at least the following policies and practices:

(1) acceptance policies on student transfers from other school districts;

(2) operation of school bus routes or runs on a non-segregated basis;

(3) nondiscrimination in extracurricular activities and the use of school facilities;

(4) nondiscriminatory practices in the hiring, assigning, promoting, paying, demoting, reassigning, or dismissing of faculty and staff members who work with children;

(5) enrollment and assignment of students without discrimination on the basis of race, color, or national origin;

(6) nondiscriminatory practices relating to the use of a student's first language; and

(7) evidence of published procedures for hearing complaints and grievances.

In addition to conducting reviews, the Texas Education Agency staff representatives check complaints of discrimination made by a citizen or citizens residing in a school district where it is alleged discriminatory practices have occurred or are occurring.

Where a violation of Title VI of the Civil Rights Act is found, the findings are reported to the Office for Civil Rights, Department of Health, Education and Welfare.

If there is a direct violation of the Court Order in Civil Action No. 5281 that cannot be cleared through negotiation, the sanctions required by the Court Order are applied.

TITLE VII, CIVIL RIGHTS ACT OF 1964; EXECUTIVE ORDERS 11246 AND 11375; TITLE IX, 1973 EDUCATION AMENDMENTS; REHABILITATION ACT OF 1973 AS AMENDED; 1974 AMENDMENTS TO THE WAGE-HOUR LAW EXPANDING THE AGE DISCRIMINATION IN EMPLOYMENT ACT OF 1967; AND VIETNAM ERA VETERANS READJUSTMENT ASSISTANCE ACT OF 1972 AS AMENDED IN 1974.

It is the policy of the Texas Education Agency to comply fully with the nondiscrimination provisions of all federal and state laws and regulations by assuring that no person shall be excluded from consideration for recruitment, selection, appointment, training, promotion, retention, or any other personnel action, or be denied any benefits or participation in any programs or activities which it operates on the grounds of race, religion, color, national origin, sex, handicap, age, or veteran status (except where age, sex, or handicap constitute a bona fide occupational qualification necessary to proper and efficient administration). The Texas Education Agency makes positive efforts to employ and advance in employment all protected groups.